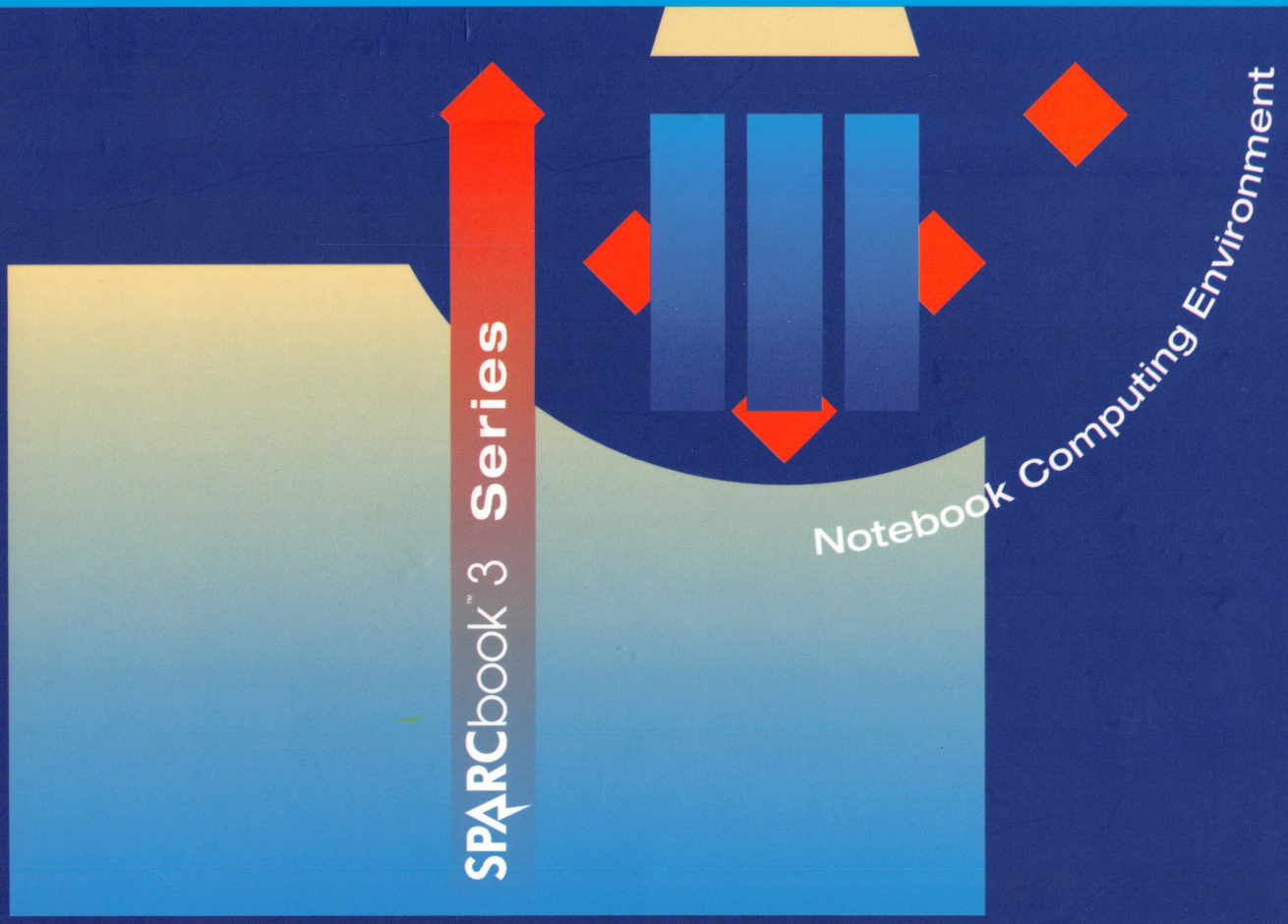
NCE User *Guide*



SPARCbook™ 3 Series

NCE User Guide

Trademarks

Issue 5.0 of

Part number 980324-5

Printed in the UK

Contents

About This Guide

The *Notebook Computing Environment User Guide* (or *NCE Guide*) explains how to use the Notebook Computing Environment (NCE), which is a special set of mobile computing software that helps you to achieve maximum productivity from your SPARCbook 3 while on the move.

The *NCE Guide* is a companion to the User Guide supplied with your SPARCbook 3.

This chapter provides:

- A summary of the *NCE Guide*
- An explanation of the typographical conventions used in this manual
- A list of related publications

Guide Summary

In addition to this chapter, this guide comprises the following:

- *Chapter 1 The Main NCE Window*

  This chapter explains how to start the NCE software. It describes the features of the main NCE window and the controls which are common to many NCE tools.

- *Chapter 2 The NCE Toolkit*

  This chapter describes the NCE toolkit and provides a description of the controls provided.

- *Chapter 3 Mobile Computing*

  This chapter describes how to use the NCE notebook computing tools to define a server, define a location, define a synchronization scheme and to open a connection.

- *Chapter 4 PCMCIA Device Configuration*

  This chapter describes how to use the NCE device configuration tools to configure an external mouse and keyboard, the external display interface, and PCMCIA cards.

- *Appendix A Regular Expressions*

  This appendix provides details of how the regular expressions used in the Files panel work.

- *Appendix B External Display Configuration*

  This appendix describes how to use the Display editor to define the parameters of a display and and to the Display types list in the Display panel.

Typographical Conventions

Different typography is used in this guide to distinguish between *NCE Guide* text and the various buttons, controls and fields you can use.

Button, Slider Control and Field Names

Button, slider control and field names are shown in **Helvetica bold**. For example:

The **Apply** button

The **Sensitivity** slider control

The **Internet Address** field

Solaris Path Names and Commands

Solaris path names and text displayed on the screen are shown in `Courier`. For example:

The `/etc/hosts` file.

Commands that you should enter at the command prompt are shown in **`Courier bold`**. For example:

```
# fdformat /dev/rpcmem0
```

Notes, Cautions and Warnings

Notes are used to give you additional information about a subject. For example:

Note

You can power your SPARCbook 3 from the external AC adapter, which is supplied with your SPARCbook 3, or from an optional 12V vehicle adapter. The internal battery can be charged from either of these sources.

Cautions are used to draw your attention to actions that could result in unexpected operation, data corruption or system damage. For example:

Caution

You should not remove the hard disk while your SPARCbook 3 is powered on or the hard disk may be damaged.

Related Publications

In addition to the *NCE Guide*, your SPARCbook 3 is supplied with the following documentation (to which you are advised to refer):

- The *SPARCbook 3 Series User Guide*

  The *SPARCbook 3 Series User Guide* explains how to set up and use your SPARCbook 3.

Note

There are different SPARCbook 3 models. In this publication, *SPARCbook 3* is used to apply to all SPARCbook 3 models.

1
The Main NCE Window

This chapter describes:

- Starting NCE
- The components of the main NCE window
- The controls common to many NCE tools

Starting NCE

To start NCE, select **NCE...** from the OpenWindows **Workspace** menu. The startup NCE window is displayed, as shown in Figure 1-1.

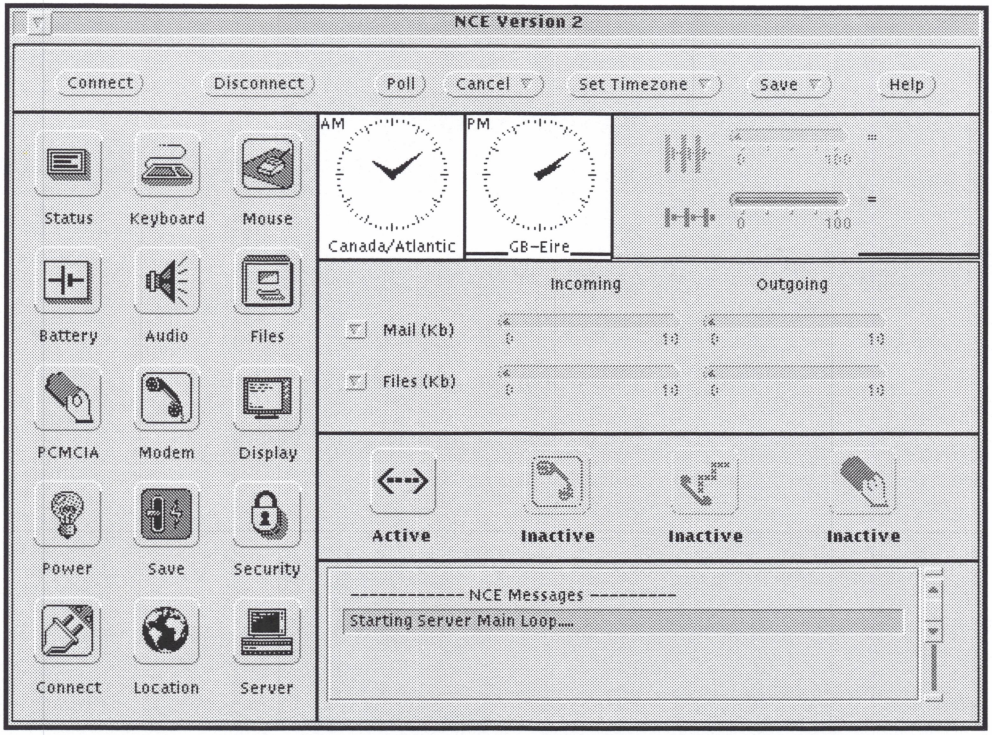


Figure 1-1 The Main NCE Window

The NCE window contains four main areas. These are the *toolkit* area (see page 1-3), the *clock* area (see page 1-4), the *battery* area (see page 1-5), and the *status* area (see page 1-6).

The menu bar at the top of the NCE window contains menu buttons which provide quick access to the most frequently used facilities. These buttons are described on page 1-8.

Toolkit Area

The toolkit area, shown in Figure 1-2, contains icons that provide access to all of the NCE facilities. (Each tool in the toolkit area is described in Chapter 3.)

Figure 1-2 The Toolkit Area

Selecting an NCE tool

To select a tool from the toolkit area, move the pointer over the associated icon in the toolkit area and click the select mouse button. The panel associated with the tool you select is displayed and is raised above any other windows. If the tool is already running but has been reduced to a desktop icon, it can be displayed by clicking on either its desktop icon or toolkit icon.

If the tool is in a hidden part of the virtual desktop (see "Virtual Desktop" in your *SPARCbook 3 Series User Guide*), it is not moved to the current display area. However, a representation of it is shown in the Virtual Desktop tool window, allowing you to move to the part of the desktop in which it is displayed

Clock Area

Two clocks are displayed in the clock area, as shown in Figure 1-3. The first clock shows the local time and the second shows your home time.

Local time

The local time, shown in the left clock face, is derived from the system time and the current location's timezone information (see "Configuring Your SPARCbook 3" in your *SPARCbook 3 Series User Guide*). This is the time that is currently being used by the system. The local timezone information is automatically updated when you select a location (from the Location panel) in which a different timezone is assigned. See "Location Panel" on page 2-33.

Home time

The home timezone, shown in the right clock face, can be set using the **Set Timezone** button (see "NCE Buttons" on page 1-8) to give you a visual display of the time in another location. If a home timezone is not selected, this clock shows the same time as the local time clock.

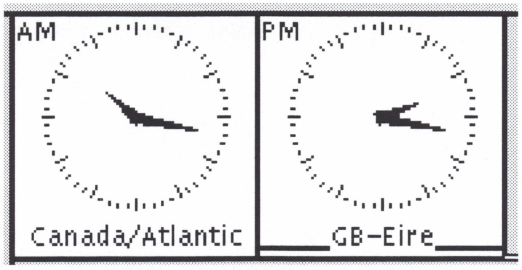


Figure 1-3 The Clock Area

Battery Area

The battery area contains two gauges. The upper gauge shows the level of charge of the external battery (if one is attached), and the lower gauge shows the level of charge of the installed internal battery. Each battery gauge shows the level of charge in terms of a percentage of full charge.

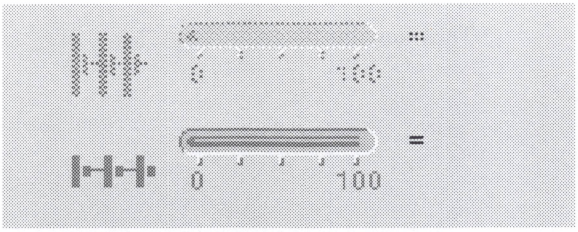


Figure 1-4 The Battery Area

One of three indicators appears at the right of each gauge. These are:

+ battery is charging

= battery is fully charged

– battery is draining

Note

The absence of these indicators when a battery is fitted shows that battery charging has been suspended. This is a safety feature that prevents overcharging. To restart battery charging, disconnect and reconnect the AC adapter.

The internal battery gauge turns yellow (light gray on a monochrome display) when the first battery warning is signalled, and red (dark gray on a monochrome display) when the second warning is signalled. The external battery provides one warning only, providing only the red (or dark gray) indication. You can set the action taken in response to battery low warnings in the Save and Resume panel (see "Save and Resume Panel" on page 2-26).

Status Area

The status area is divided into three parts, These are:

- Mail and file transfer gauges
- Interface activity indicators
- Status text area

These are illustrated in Figure 1-5.

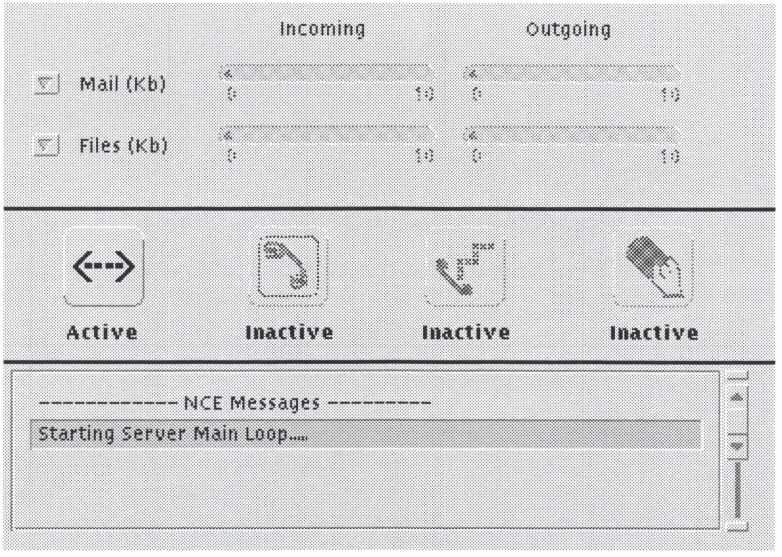


Figure 1-5 The Status Area

Transfer gauges

The mail and file transfer gauges indicate the progress of mail (incoming and outgoing) and file transfer operations (incoming and outgoing).

You can configure the mail gauges and files gauges to show either the number of messages to be transmitted and received, or the amount of data in kilobytes (KB) to be transferred. The files gauges shows the amount of data remaining to be transferred.

When you use your SPARCbook 3 away from a mail server, outgoing mail is stored on your SPARCbook 3, and the outgoing mail gauge shows the number of messages, or amount of data, waiting to be

transferred. Similarly, the files gauges show the amount of data to be transferred for file synchronization. After you have opened a connection to the server:

- The outgoing mail gauge reduces as the messages are transferred.
- The incoming mail gauge shows full if there is mail on the server, and reduces as messages arrive from the server.
- The files gauges indicate the amount of file data transmitted and received for file synchronization operations. File transfers should only be set up when you are connected.

Activity indicators

Below the gauges is a set of interface icons. These icons represent the Ethernet interface, modem interface, ISDN interface, and PCMCIA interface. If any of these interfaces is in use (or the network is attached, in the case of Ethernet), the icon is highlighted and the caption beneath it changes from "Inactive" to "Active". The PCMCIA icon indicates the active PCMCIA slots.

Status text area

At the bottom of the NCE window is a status text area. Your computer uses this area to inform you about the status of the NCE interfaces; for example, the progress of any connections being made.

NCE Buttons

At the top of the NCE window is a set of buttons that provide fast access to the most frequently required facilities.

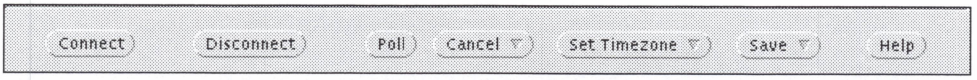


Figure 1-6 NCE Buttons

The following menu buttons are provided:

Connect — Select **Connect** to establish a connection using the connection method specified in the Location panel. If you want to connect to a server using a route other than the one configured for the current location, use the **Custom Connection** interface provided by the Connect panel. See "Connect Panel" on page 2-30.

Disconnect — Select **Disconnect** to disconnect an established connection.

Poll — Select **Poll** to check a remote server for new mail or changed files. This button allows you to start a polling operation between the times that they would occur automatically, as defined in the Server Panel ("Server Panel" on page 2-37).

Cancel — Choose from the **Cancel** menu to cancel a current mail transfer, a connection attempt, or a Save due to low battery condition.

Set Timezone — Choose from the **Set Timezone** menu to set the local time (see "Location Panel" on page 2-33) or the home time (see "Clock Area" on page 1-4).

Save — Choose from the **Save** menu to initiate a Save or a Sleep operation. See "Save and Resume Panel" on page 2-26.

Help — Select **Help** to access help on the NCE facilities.

2
The NCE Toolkit

The NCE toolkit comprises a number of programs with which you can configure your portable computing environment. This chapter provides details of how to use each of the following tools:

- Status Panel
- Keyboard Panel
- Mouse Panel
- Battery Panel
- Audio Panel
- Files Panel
- PCMCIA Panel
- Modem Panel
- Display Panel
- Power Manager Panel
- Save and Resume Panel
- Security Panel
- Connect Panel
- Location Panel
- Server Panel

Buttons Common to the NCE Panels

The following buttons are common to several NCE panels:

Apply Select **Apply** to make the selected configuration apply immediately. The selected configuration is not saved, and is not restored when you reboot the system.

Make Default

Select **Make Default** to make the selected configuration the default configuration. The default configuration is saved and restored whenever you reboot the system.

If you want the default configuration to take effect immediately, select **Apply** after selecting **Make Default**.

Note

NCE does not have to be running for your SPARCbook 3 to use the default configuration.

Reset Select **Reset** to reset all parameters to the factory programmed configurations. The values previously applied or made default are lost.

Status Panel

To display the Status panel, select the **Status** icon in the toolkit area. The Status panel provides the clocks, the connection status information, and the battery status area, all of which are described in "Status Area" on page 1-6.

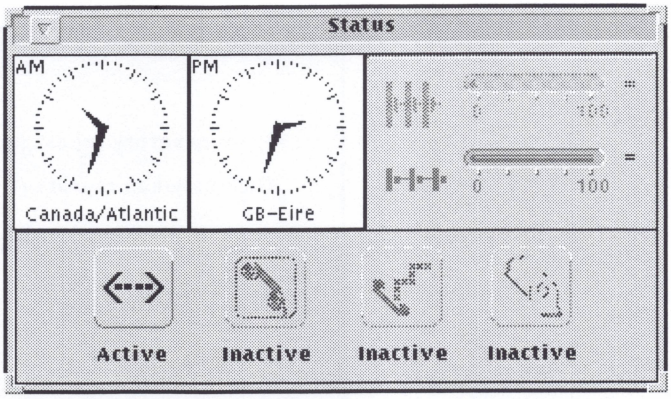


Figure 2-1 Status Panel

Keyboard Panel

To display the Keyboard panel, select the **Keyboard** icon in the toolkit area. You use the Keyboard panel to set the operating parameters for the built-in keyboard and an external keyboard. (It is not possible to configure the internal and external keyboards with different parameters.)

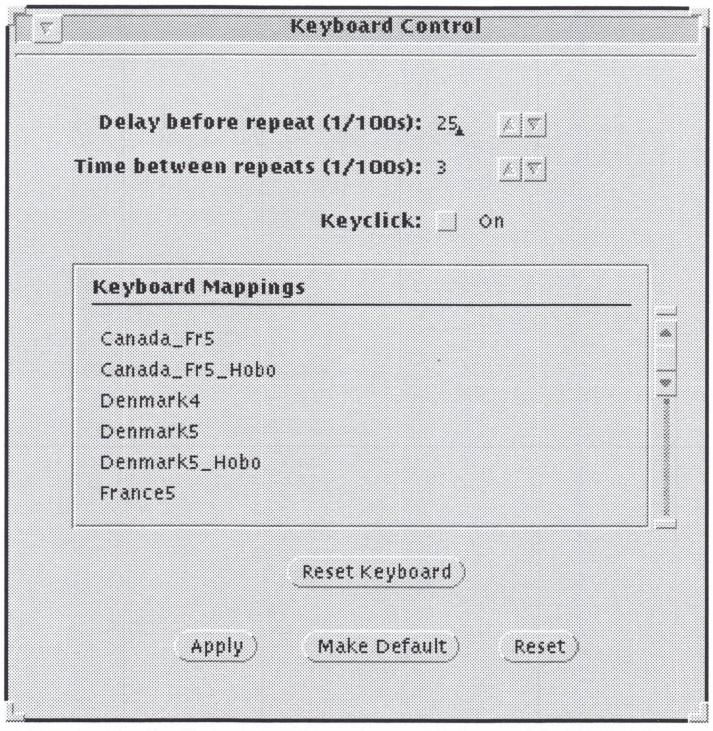


Figure 2-2 Keyboard Panel

Delay before repeat

Enter a value representing the time it takes for the keyboard to repeat a character after it is first pressed. The time is measured in hundredths of a second.

Time between repeats

Enter a value representing the time delay between the second and subsequent repeats of a character while a key is held down. The time is measured in hundredths of a second.

Keyclick Select **Keyclick** to hear audible keyclicks when you type on the keyboard. To adjust the volume of the beeper use the Audio panel. (See "Audio Panel" on page 2-10.)

Keyboard Mappings
Choose a mapping for the internal and external keyboard from the **Keyboard Mappings** list.

Note

If you choose a mapping that does not match the built-in keyboard, the characters generated by the keys may not match those printed on the keytops.

Reset Keyboard
Select **Reset Keyboard** to reset the external keyboard.

Mouse Panel

To display the Mouse panel, select the **Mouse** icon in the toolkit area. You use the mouse panel to set the way in which the pointer on the display responds to input from the pointing stick or from an external mouse.

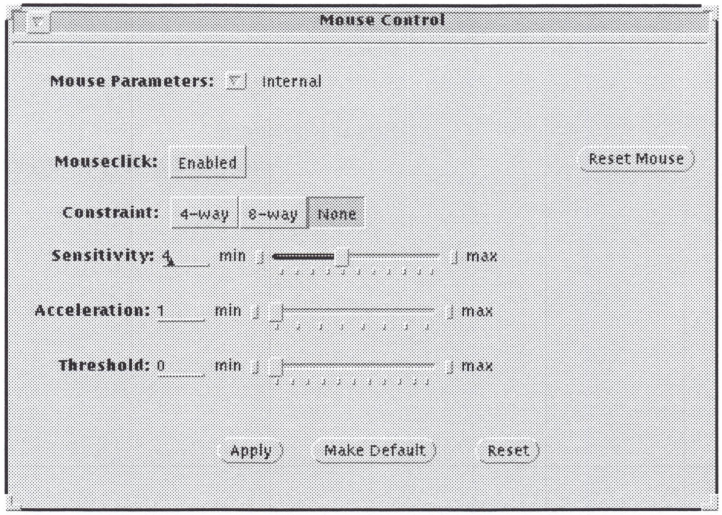


Figure 2-3 Mouse Panel

Mouse Parameters

Choose **Internal** to set the following operating parameters for the pointing stick or **External** to set them for an external mouse.

Mouseclick

Select the **Mouseclick** button to enable or disable audible mouseclicks. When this function is enabled, the internal speaker sounds short tone each time the select or menu key on the mouse is pressed. You can adjust the volume of the beeper using the Audio panel. (See "Audio Panel" on page 2-10.)

Constraint

These three buttons control the direction of movement of the pointer in response to movement of the mouse (or pressure on the pointing stick).

Select **4-way** constraint to enable the pointer to move only

vertically and horizontally on the screen.
Select **8-way** constraint to enable the pointer to move only vertically, horizontally, and diagonally.
Select **None** to enable the pointer to move in any direction.

Sensitivity
Move the **Sensitivity** slider to increase or decrease the speed of movement of the pointer on the screen in response to pressure on the pointing stick.

Note

There may be a tendency for the pointer on the display to drift with a high sensitivity setting. This can be rectified by pressing the **Pause-Home** key sequence.

Acceleration
Move the **Acceleration** slider to increase or decrease the speed of movement of the pointer in response to movement of the mouse (or pressure on the pointing stick) after the **Threshold** has been reached.

Threshold
The threshold defines the number of pixels that are moved before the acceleration parameter is applied (that is, an interpretation of whether a small or large movement is being called for).

Move the **Threshold** slider to increase or decrease the speed at which the pointer responds to small or large movements of the mouse (or pointing stick).

Reset Mouse
Select **Reset Mouse** to restore the factory set default parameters to the pointing stick.

Battery Panel

To display the Battery panel, select the **Battery** icon in the toolkit area. You use the Battery panel to control the way in which the internal and external batteries are used.

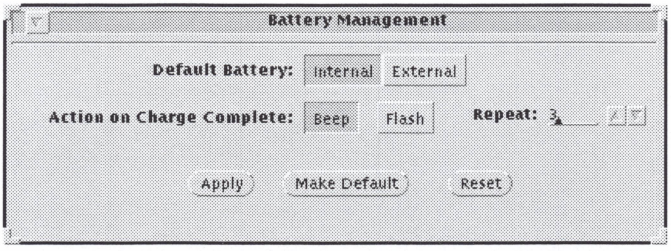


Figure 2-4 Battery Manager Panel

Default Battery

The default battery is the one that is discharged first. Choose to make either the **Internal** or the **External** battery the default battery.

For example, you can choose to discharge the external battery first in order to preserve charge in the internal battery for use at a later time. This is useful because the internal battery provides a relatively short life compared to that of the external battery (about 60 minutes compared to 5 hours, approximately, from a fully charged state). When the default battery is exhausted, the system automatically switches to the other battery.

Battery-low warnings are not given until all of the battery sources are nearly discharged.

Note

This option is only applicable if you have an external battery pack attached.

Action on Charge Complete

Select either **Beep** or **Flash** to specify how your SPARCbook 3 signals when battery charging is complete. If you select **Beep**, a number of beeps sound when the battery is fully charged.

If you select **Flash**, the battery warning LED flashes when the battery is fully charged.

If both batteries are being charged, the signal is given only when they both become fully charged.

If you do not select **Beep** or **Flash**, all battery charge warnings are disabled. However, battery information is still shown on the status display.

Audio Panel

To display the Audio panel, select the **Audio** button in the toolkit area. You use the Audio panel to adjust the characteristics of the audio interface and select the sound output channel. The audio interface comprises the line-in and line-out connections, and the internal microphone and speaker.

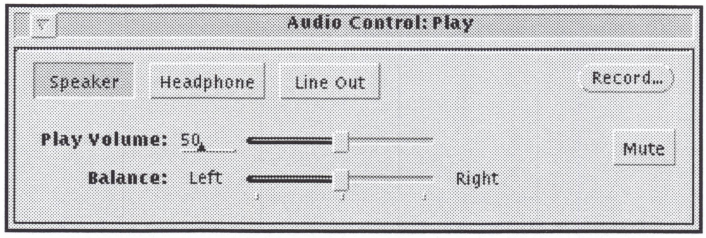


Figure 2-5 Audio Panel

Opening the Audio panel starts the Solaris Audio tool. For further information about using Audio tool, refer to SunSoft's documentation set (see "Related Publications" on page viii) for information about the Audio Control application.

Files Panel

To display the Files panel select the **Files** icon in the toolkit area. You use the Files panel to maintain synchronization (or similarity) between sets of files on a remote system (server files) and on your SPARCbook 3 (local files). You would typically use this facility to provide a means of updating the server files with changes made during disconnected work sessions with your SPARCbook 3.

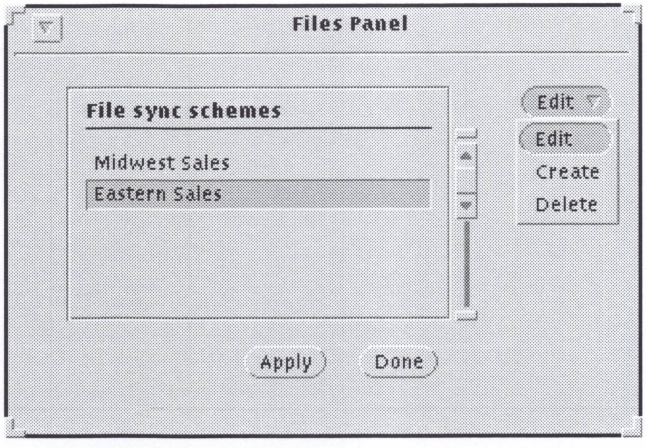


Figure 2-6 Files Panel

The Files panel displays a list of named synchronization schemes which you can recall. You can create, edit and delete synchronization schemes.

Note

Using the files facility can cause large amounts of data to be transferred on connection to other machines. Refer to "Server Panel" on page 2-37 for information on how to configure for server polling.

File sync schemes

This displays a list of named synchronization schemes. Select one from the list to use or edit.

Edit Select this button to display the following options:

Create

This adds a new (blank) synchronization scheme to the list.

Delete
This button deletes the selected synchronization scheme from the list.

Edit
This button opens the Files Control Area. Use this to edit a synchronization scheme.

Files control area

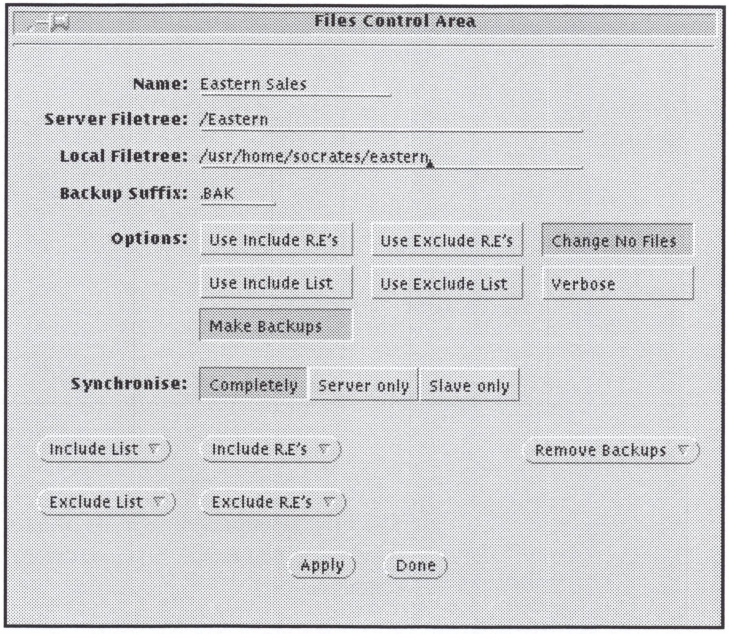


Figure 2-7 Files Control Area

Name The name of the synchronization scheme. The name "Blank Scheme 1" appears by default. This can be changed as required.

Server Filetree
This field specifies the path name of the mounted server directory on your SPARCbook 3. For example, if a directory on the server with the name `/usr/home/name` is mounted on `/mnt`, this field displays `/mnt`.

Local Filetree
Enter the path name of the directory on your own

SPARCbook 3 that you want to synchronize with the directory identified in the **Server Filetree** field.

Backup Suffix

Enter the suffix that you wish to use to identify backup files. The default suffix is `.BAK#`, where # represents an incrementing number to differentiate between multiple versions of the same file.

Options Provides the following options:

Use Include Regular Expressions

Select **Use Include Regular Expressions** if you wish to use regular expressions to control the inclusion of file trees. For example, the expression `.*\.c` only allows the synchronization of all files with `.c` endings.

Use Exclude Regular Expressions

Select **Use Exclude Regular Expressions** if you wish to use regular expressions to control the exclusion of file trees. For example, using the expression `.*\.o` allows the synchronization of all files except those with `.o` endings.

Change No Files

Select **Change No Files** to see the effect of synchronization without actually taking any action.

Use Include List

Select **Use Include List** to use a list of specific files for inclusion. This allows you to select files and directories using the OpenWindows graphical user interface rather than regular expressions.

Use Exclude List

Select **Use Exclude List** to use a list of specific files for exclusion.

Note

For more information about regular expressions, see Appendix A, "Regular Expressions". For information about include and exclude lists and how they can be used to control file synchronization, see "File Synchronization" on page 3-13.

Verbose

Select **Verbose** to enable actions to be reported in the Files panel status window.

Make Backups
Select **Make Backups** to ensure that no files are destroyed. Files to be updated are first backed up using the specified backup suffix. Subsequent backups increment the number appended to the suffix defined in the **Backup Suffix** field.

Synchronize
This button offers the following choices:

Completely
Makes the two trees identical, subject to the expressions defined in the include and exclude lists. The local computer and server update each other with all changed files.

Server only
This only updates files that have been changed on the server.

Slave only
This only updates files that have been changed on the local machine.

Remove Backups
This button offers the following choices:

Purge all but latest
Choose this option to remove all but the latest backups.

Delete all backups
Choose this option to delete all backups.

Include List
Choose **Include List** to either **Edit...** the include list or to **Clear** the list. If you choose to edit the list the Include File List editor panel appears.

The List editor panel gives the following options:

Current Directory
This shows your current location in the file system.

Directory Mode
Select either **Show** to view all files within a directory when it is selected from the list, or **Select** to select all files within a directory when it is selected from the list.

Parent
Select this to move up one level in the directory structure.

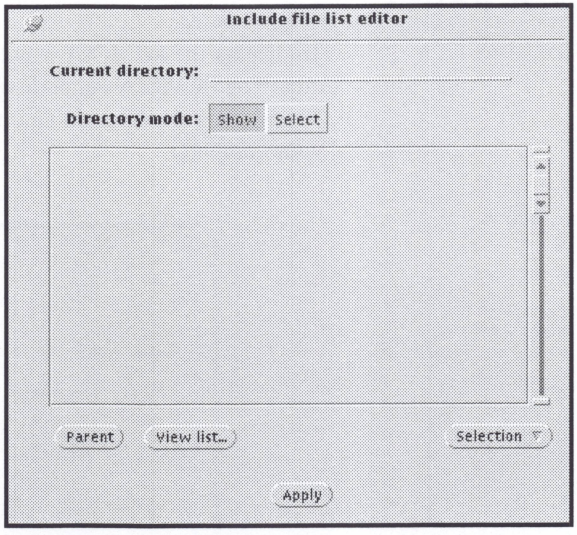


Figure 2-8 File List Editor

View List...
Select **View List...** to display a list of all of the files and directories currently selected.

Selection
This button provides choices to **Select all this level**, **Deselect all this level**, **Select all this level and beneath**, or **Deselect all this level and beneath**.

Exclude List
Choose **Exclude List** to either **Edit...** the exclude list using the editor panel, or to **Clear** the list.

Include Regular Expressions
Choose **Include Regular Expressions** to either **Edit...** the include regular expressions using the editor panel, or to **Clear** the include regular expressions.

Exclude Regular Expressions
Choose **Exclude Regular Expressions** to either **Edit...** the exclude regular expressions using the editor panel, or to **Clear** the exclude regular expressions.

PCMCIA Panel

To display the PCMCIA panel select the **PCMCIA** icon in the toolkit area. The PCMCIA panel displays a list of installed PCMCIA cards. These cards are detected automatically when they are plugged into your computer.

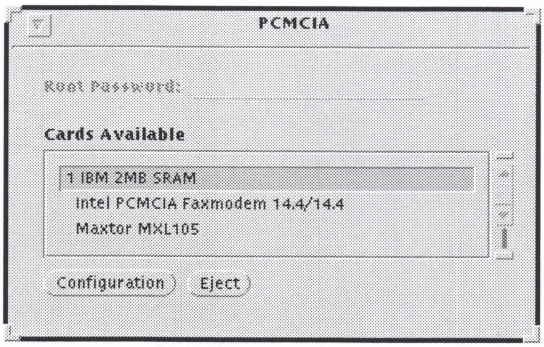


Figure 2-9 PCMCIA Panel

Caution

You do not need to power your SPARCbook 3 off before inserting or removing a *single* PCMCIA card. However, before inserting or removing a second card, you must ensure that either your SPARCbook 3 is powered off, or that there are no operations in process with the card that is already installed. Failure to observe these precautions can result in data loss or corruption.

Root Password

If your SPARCbook 3 has been set up with a root password, you must enter this password before you can continue.

Cards Available

This list shows the PCMCIA cards that are currently available. An available card is one that is recognized by your SPARCbook 3, for which there are predefined installation and ejection scripts. A "0" next to a card indicates that it is fitted in PCMCIA slot 0, and a "1" indicates that a card is fitted in slot 1.

Configuration

With this control you can configure certain actions to take place automatically when a particular card type is inserted or ejected. For example, for a memory card or a disk drive, you can specify a mount point to automatically mount the card when it is inserted. A PCMCIA Configuration window displays shell scripts which are executed when a PCMCIA card is inserted. You can add or modify scripts as required.

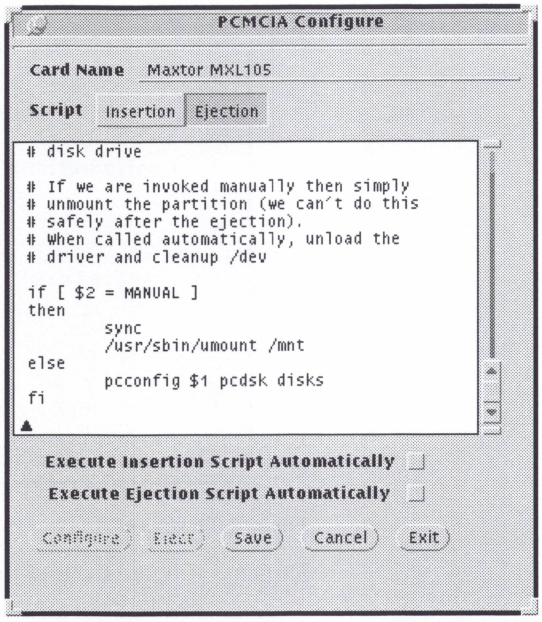


Figure 2-10 PCMCIA Configure Window

Eject Select **Eject** to prepare a card for ejection. In the case of a memory card or disk drive, the relevant file system is unmounted. In the case of a modem card, the device is closed. After you select **Eject**, you can remove the card from your computer.

Note

The PCMCIA panel **Eject** button does not cause a PCMCIA card to be physically ejected. To remove a card from your SPARCbook 3, press the appropriate mechanical ejector button located within the PCMCIA aperture. See "Using the PCMCIA Interface" in the *SPARCbook 3 User Guide*.

Modem Panel

To display the Modem panel, select the **Modem** icon in the toolkit area. You use the Modem panel to select between the internal modem or PCMCIA modem, to set auto-answer mode and to set the audio level for the modem connection. The settings for the selected modem are used for connections defined in the Location panel (see "Location Panel" on page 2-33).

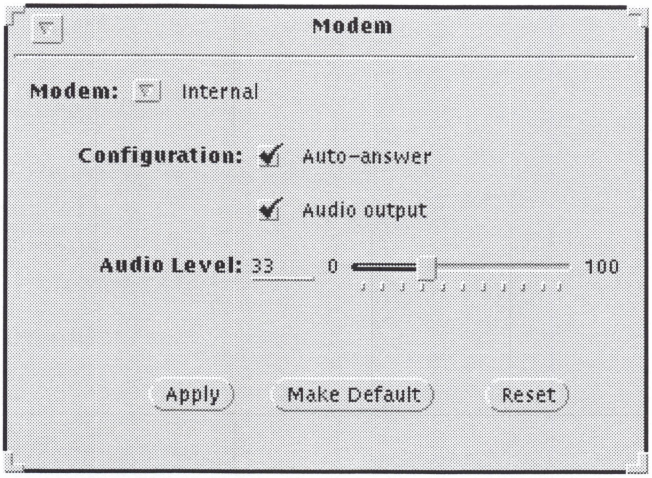


Figure 2-11 Modem Panel

Modem Choose the **Internal** or **PCMCIA** modem on which to apply the following parameters:

Configuration
Select to enable or disable **Auto-answer** mode for the specified modem.
Select to enable or disable **Audio Output**. Audio output enables you to hear the modem dialing and connection sequence through speakers or headphones. You can hear the audio output if the output device is enabled in the Audio panel (see "Audio Panel" on page 2-10).

Audio Level
Move the **Audio Output** slider to determine the volume of the audio signal used when the modem is making a connection.

Display Panel

To display the Display panel select the **Display** icon in the toolkit area. The Display panel is used to control the resolution of the image and type of display that the image is displayed on. It also allows you to select between emulated framebuffer mode and native mode.

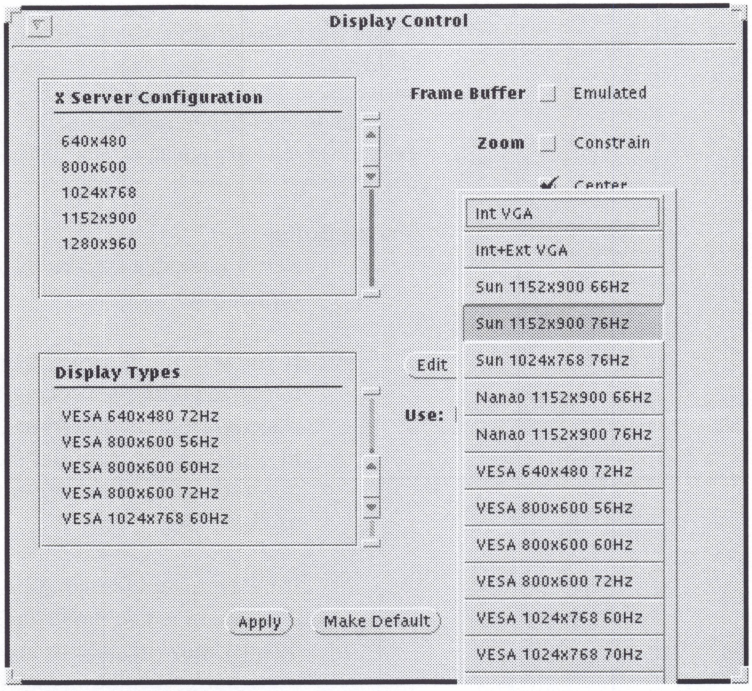


Figure 2-12 Display Panel

There is an interdependency between these controls. For example, to display a 1280 x 960 pixel image on the internal display you would select 1280 x960 from the X Server Configuration list, then enable **Frame Buffer, Emulation**, and then select IntVGA from the **Use** list. To make the change take effect, you need to click on **Apply** and then exit and re-enter OpenWindows.

Note

Configuration changes do not take effect until you exit and re-start OpenWindows.

The following facilities are provided by the Display panel:

X Server Configuration

This contains a list of framebuffer sizes. If you select a framebuffer from this list, and the emulated framebuffer mode is enabled, the server uses an emulated framebuffer of the chosen size.

Note

If you select a framebuffer size larger than 640 x 480 pixels, your SPARCbook 3 scales the image, by combining four pixels into one, to fit it all on the internal screen. This may leave large blank borders round the image. Use zoom in (by pressing **Pause-PageUp** on the keyboard) to view the image at one-to-one and use panning to view hidden parts of the image.

Frame Buffer

Select to enable (shown by a check) or disable emulated framebuffer mode.

If you start the X server in emulated mode, then the server is initialized with the framebuffer resolution set to that selected from the **X Server Configuration** list. The image in the emulated framebuffer can be displayed on a screen of a different size and the zooming and panning facilities can be used.

If the emulated framebuffer mode is disabled, the X server operates in native mode and drives the display hardware directly allowing you to use accelerated graphics. The framebuffer resolution matches the display selected from the **Use** list on which the server is started. For example, if you enable a 1024 x 768 pixel external display, the framebuffer dimensions are set to 1024 x 768 pixels when OpenWindows is next started.

Zoom (only available in emulated framebuffer mode)
Select to enable or disable **Constrain** or **Center**, or both.

Constrain
Enable constrain to suppress panning on a zoomed image. (This is the same as using the `-zoomconstrain` option when starting the X-server.)

Center
This option affects the image area that is magnified when

you zoom in. If **Center** is enabled, the area with the cursor at its center is zoomed. (This is the same as using the `-zoomcenter` option when starting the X-server.) If Center is disabled, the area to the right and below the cursor is zoomed.

Display Types
This contains a list of the currently configured display types.

Edit Select **Edit** to choose one of the following:

Edit
This opens the Display editor (see Figure 2-13). This enables you to edit the parameters defined for a display type selected in the **Display Types** list (some display types are read only, and cannot be edited).

Create
This opens the Display editor (see Figure 2-13). This enables you to create a new display type to add to the **Display Types** list.

Delete
This deletes a selected display type from the **Display Types** list.

Use This is menu is used to select the required external display type. Click on the **Use** button to display a list of currently defined display types and choose the one required.

Caution

The built-in display is turned off when you enable a native image larger than 640 x 480 pixels. If you Resume into OpenWindows without the selected external monitor connected you will have no displayed image. To prevent this, switch to emulated mode or native mode on IntVGA if you intend to move and use your SPARCbook 3 with a different display. See the chapter "Problem Solving" in the *SPARCbook 3 User Guide*.

Test This activates the selected external display for a few seconds and then reverts to the internal display.

Note

If you are running in native mode and select a display with a different resolution from your current display, the image on the external screen will be garbled. If the image is stable (is not rolling) your selection should work.

Apply This activates the display interface for the selected display type. **Apply** saves any changes made to the **Display Types** list, and selects the display type specified by **Use**.

Make Default

Select **Make Default** to make the selected display type the default choice. The default choice can be re-activated by opening the Display panel and selecting the **Apply** button.

Reset Select **Reset** to cancel changes made since the Display panel was opened.

Display editor

The Display Editor is shown in Figure 2-13.

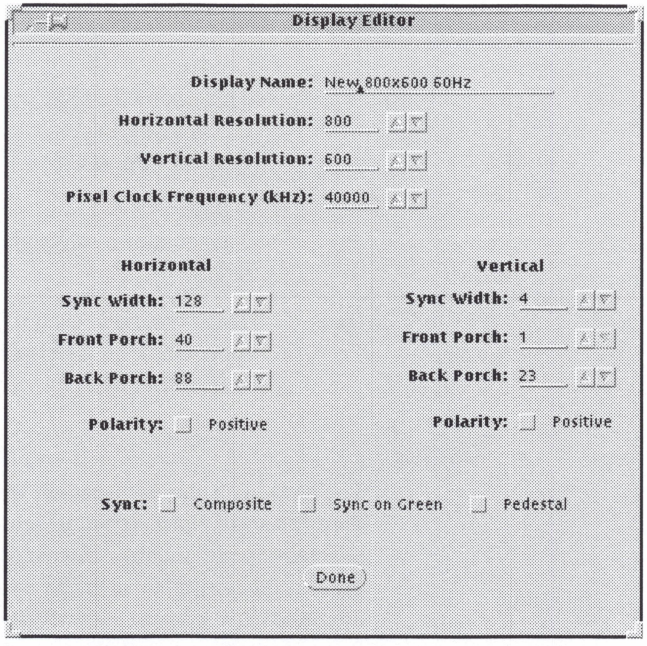


Figure 2-13 Display Editor

Note

You should always consult the technical documentation supplied with your display for a definition of the signal timings and characteristics to use. However, for a brief discussion about display timing signals see Appendix B "External Display Configuration" .

You can use the Display editor to define following parameters:

Name
Defines a name for a set of display parameters. When you save the configuration, the name appears in the **Display Types** list.

Resolution
Specifies the resolution of the external display in pixels of the display horizontally (H) and vertically (V).

Pixel Clock Frequency
Specifies the frequency of the pixel clock for the external display. The nearest available value is automatically used.

Sync Width
Specifies the synchronization pulse time period in pixels horizontally (H), and in lines vertically (V). The horizontal timing is rounded up to the nearest 4-pixel boundary.

Front Porch
Specifies the front porch timings in pixels horizontally (H), and in lines vertically (V). The horizontal timing is rounded up to the nearest 4-pixel boundary.

Back Porch
Specifies the back porch timings in pixels horizontally (H), and in lines vertically (V). The horizontal timing is rounded up to the nearest 4-pixel boundary.

Polarity
Select positive or negative synchronization signals to suit your display.

Sync
Select: **Composite** sync for displays that require a combined horizontal and vertical synchronization signal; **Sync on Green** for displays that require the synchronization signals to be superimposed onto the green video channel; or **Pedestal** for displays that require pedestal.

Done Select **Done** to return to the Display panel.

Use Select **Use** to select a currently defined display type from a pull down menu.

Power Manager Panel

To display the Power Manager panel select the **Power** button in the toolkit area. You use the Power Manager panel to customize the power management facilities available on your computer. Certain power management facilities are automatic. For example, the processor clock is stopped whenever the processor is idle, and a number of unused I/O devices are powered down.

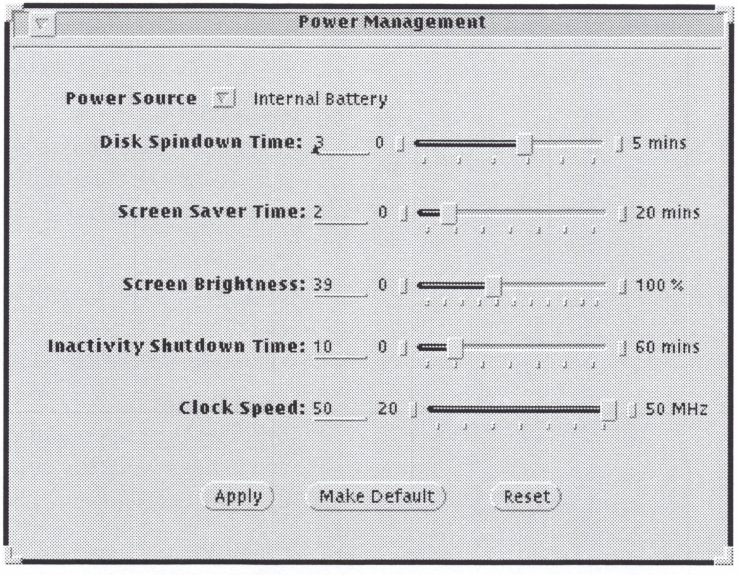


Figure 2-14 Power Manager Panel

Your computer provides the following user-changeable power management functions:

Power Source

Select **DC** or **External Battery** or **Internal Battery** as the power source on which to apply the parameters described below. You can use this facility to select a different power management scheme depending on whether you are operating on battery power or external AC power.

Disk Spindown Time

This feature automatically stops the hard disk from spinning if it is not being used for any length of time. You can use the slider to vary the period of disk inactivity, after which the

disk is stopped. The period can be set to between 0 and 5 minutes. If you select zero minutes, the disk does not stop. The default disk spindown period is 2 minutes. The disk restarts automatically when disk access is required but there is a short delay of up to 3 seconds while the disk starts up again.

Screen Saver Time
This defines a period of keyboard and mouse inactivity after which the display backlight is turned off. The backlight is automatically turned on again when you press a key on the internal or external keyboard, or when you move the pointing stick or external mouse. You can use the slider to vary the inactivity timer period to between 1 and 60 minutes. The default period is 5 minutes. If you select zero minutes, the screen is not turned off.

Screen Brightness
This sets the brightness of the display.

Note

You can also use the keyboard increase- and decrease-brightness keyboard commands to vary the brightness of the display but NCE overrides the effects of these key combinations.

Inactivity Shutdown Time
This defines the period of mouse and keyboard inactivity after which your computer is powered off with an automatic Save, or put into Sleep mode (depending on the **Action on Inactivity Timeout** selection, see "Save and Resume Panel" on page 2-26).
By default, this feature is disabled with a zero minute timeout. You can use the slider to set the inactivity timeout to between 5 minutes and 1 hour.

Clock Speed (MHz)
Move the **Clock Speed (MHz)** slider to define the speed of the internal clock of the processor, measured in megahertz (MHz).
The speed at which you set the clock affects the speed at which operations proceed within your computer's internal processing circuitry.

Save and Resume Panel

To display the Save and Resume panel, select the **Save** icon in the toolkit area. You use the Save and Resume panel to enable and configure Save and Sleep operations.

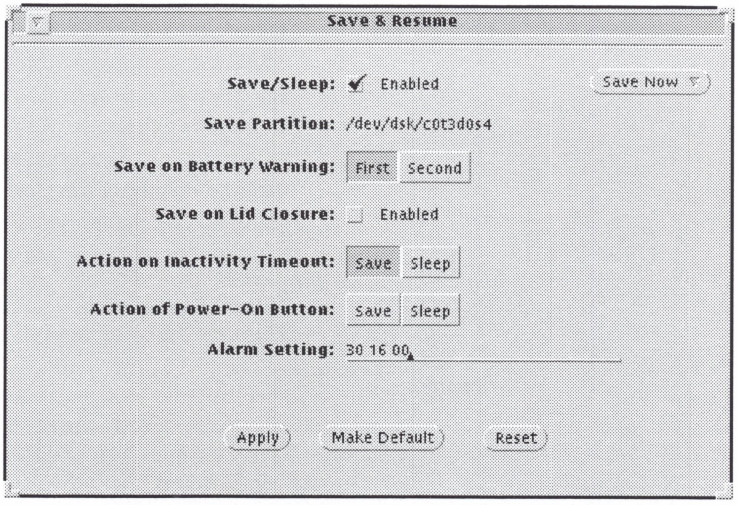


Figure 2-15 Save and Resume Panel

The Save and Resume panel provides the following facilities:

Save/Sleep

Select to enable or disable **Save/Sleep**. If you disable **Save/Sleep**, you need to shut down and start up your computer using the normal Solaris commands.

Save Now

From this button, choose **Save Now** to initiate a Save or **Sleep Now** to place your computer in Sleep mode.

Note

To power your SPARCbook 3 off when Sleep and Save are disabled, log in as `root` and enter the command `halt`. When your SPARCbook 3 displays the `ok` prompt, press **Pause-O**.

Save Partition

This is provided for information only. You cannot edit it.

Save on Battery Warning

Before your computer initiates an automatic Save on low battery condition, it alerts you with the battery LED. Select either **First** or **Second**, to select whether the Save occurs after the first warning (battery LED flashing) or after the second warning (LED flashing quickly). The first warning indicates that you have between 5 and 10 minutes of battery power left; the second indicates that you have approximately 2 minutes or less battery power left.

Save on Lid Closure

Select **Save on Lid Closure** to enable or disable an automatic Save each time you close the lid of your SPARCbook 3.

If you wish to use your computer as a desktop machine with the lid closed (with an external display, keyboard, and mouse connected), this feature should be disabled.

Action on Inactivity Timeout

Select **Save** or **Sleep** as the action taken when the **Inactivity Shutdown Time**, as defined in the Power Manager panel, elapses. See "Power Manager Panel" on page 2-24. If **Save** is selected, your computer performs a Save when the timeout elapses. If **Sleep** is selected your computer saves the current state of your computer to the hard disk, and then turns off the display and I/O devices.

Action of Power-On Button

Select **Save** or **Sleep** as the action taken when the Power-On button is pressed while your computer is operating. If **Save** is selected, your computer performs a Save. If **Sleep** is selected your computer enters the Sleep mode.

Alarm Setting

Set a time for the system to power up automatically. The system powers up at this time without any further intervention.

The format for **Alarm Setting** is: **dd:hh:mm**, where **dd** is day, **hh** is hour, and **mm** is minute. For example, to have your SPARCbook Resume at 7.15 a.m. on the 4th day in the month, you would enter **04:07:15**.

The **Alarm Setting** is set for the local timezone in use when the alarm setting is applied.

Security Panel

The Security panel, shown in Figure 2-16, enables you to protect your removable hard disk from unauthorized use in another SPARCbook 3. If you enable disk security, you can identify up to six additional SPARCbook 3 computers which are allowed access to your hard disk.

To display the Security panel, select the **Security** icon in the toolkit area.

Note

Your own SPARCbook 3 automatically has access to your hard disk.

Figure 2-16 Security Panel

Note

The security measures described here cannot be overridden and should be disabled before you return your computer or hard disk for service.

Root Password

If your SPARCbook 3 is set up with a root password, you must enter this password before you can continue.

Disk Security Enabled

Select the **Disk Security Enabled** button to enable or disable disk security. If you disable disk security, the six fields in the **Systems Allowed Access** list are cleared.

If you enable disk security, the six fields in the **Systems Allowed Access** list display the numbers of any SPARCbook 3's that are able to use your hard disk.

Systems Allowed Access

These fields show the serial numbers of any SPARCbook 3's that can use your hard disk. You can add or change any of these numbers to enable new or different SPARCbook 3's to access the hard disk.

To enable another SPARCbook 3 to access your hard disk, enter the last six digits of its serial number in one of the **Systems Allowed Access** fields (the serial number is printed on the base of the SPARCbook 3) and check the associated box. For example, if you want a SPARCbook 3 with the serial number S3A30386 to have access to your hard disk, type **A30386** in one of the fields.

Connect Panel

The Connect panel enables you to open a connection to a remote computer using the Serial Line Interface Protocol (SLIP). This enables you to use the network facilities of your computer as if it were attached to the local area network. With the Connect panel you can select a connection whose parameters have been set up and stored previously in the Location panel.

To display the Connect panel, select the **Connect** icon in the toolkit area.

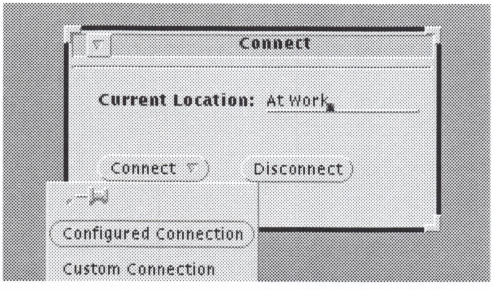


Figure 2-17 Connect Panel

Current Location

This is the location currently selected in the Location panel.

Connect Select **Connect** to choose one of the following:

Configured Connection

When a connection has been configured in the Location panel, you can choose **Configured Connection** to open the connection. This has the same effect as selecting the **Connect** button from the menu bar at the top of the main NCE window.

Custom Connection

This option allows you to edit the connection parameters for this connection attempt. The location profile currently selected in the Location panel is opened for

you to edit (see "Location Panel" on page 2-33). Any changes that you make are lost after this connection attempt. You can modify the following parameters:

Local Hostname
Used to change a specific host name for the location for this connection attempt.

Internet Address
Used to change the Internet Protocol (IP) address for your locality for this connection attempt.

Destination Hostname
Used to change the network host name for the remote computer for this connection attempt.

Destination Password
Used to change the password required for you to gain access to a remote computer for this connection. This entry can be referenced as PASSWORD in the Chat Script field.

Dialstring
Used to change the telephone number for this connection attempt. This entry can be referenced as DIALSTRING in the Chat Script field.

Chat Script
This allows you to change the chat script for this connection attempt. The DIALSTRING and PASSWORD keywords are special and are substituted with the contents of the **Dial String** and **Destination Password** fields.

Default Router
Changes the default router host name for this connection attempt.

Dialing Method
Used to select either tone or pulse dialing. Consult the local service provider for your location to check which you should use. The default is tone dialing.

Modem
Used to select either the built-in modem or a PCMCIA modem for communication over a telephone line. The built-in modem is approved for use in the United States of America and Canada, but you can use a PCMCIA modem in other countries.

Dataport

This button is used for a dataport device. When you select this button, the system prompts you to continue when the connection is initiated. This gives you time to manually dial the destination telephone number.

Disconnect

Select **Disconnect** to close an existing connection to a selected remote site.

Location Panel

The Location panel enables you to configure your computer for operation and communication at different locations. For example, when you arrive at a new location, you may need to change your host name and IP address. Once you have entered the information needed for a particular location, you can store it as a location profile for future use. You can store profiles for many locations. To restore a location profile, select the required one from the Location Profiles area, as described below.

To display the Location panel, select the **Location** icon in the toolkit area.

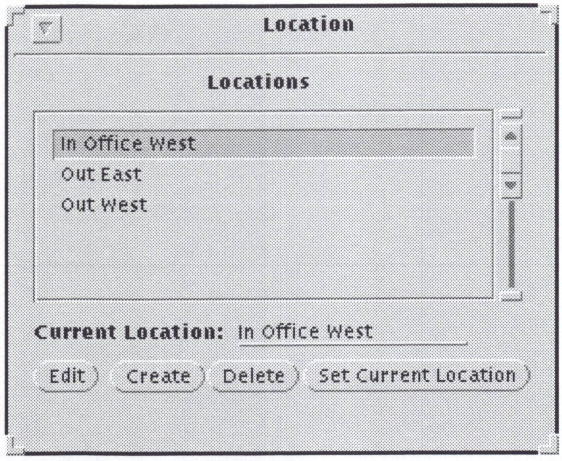


Figure 2-18 Location Panel

Locations The **Locations** list contains a list of previously defined location profiles.

Current Location
This shows the location currently in use.

Edit This is used to edit a location profile. When you select the **Edit** button, the main Location editor appears.

Create This is used to create a location profile. When you select the **Create** button, the main Location editor appears.

Set Current Location
This is used to activate the location selected in the **Locations** list.

Location editor

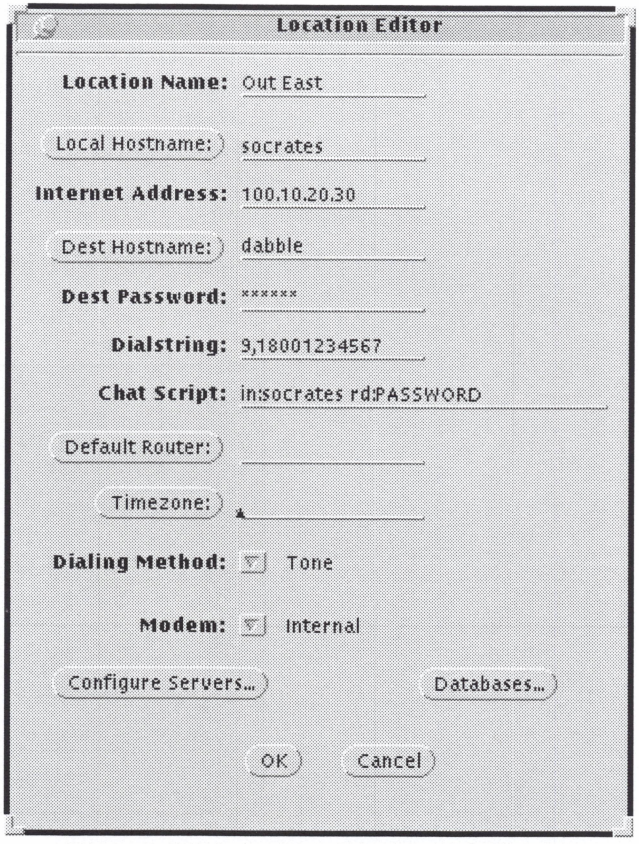


Figure 2-19 Location Editor

The Location editor provides the following controls:

Location Name
Used to enter the name for this location.

Local Hostname
Used to enter a specific hostname for the location. The default is the standard system hostname. To change the hostname for the location, select the **Local Hostname** button and choose from the list.

Internet Address
Used to specify an Internet Protocol (IP) address for

your locality. The default is the standard system IP address. You can use this facility to change the IP address of your computer without rebooting.

To change the IP address for the location, select the **Local Hostname** button and choose from the list.

Destination Hostname
Used to enter a network host name for the remote computer you will normally communicate with on the remote network.

Destination Password
Used to define the password needed to gain access to a computer via the connection. This entry can be referenced as PASSWORD in the Chat Script field.

Dial String
Used to define the telephone number to dial to make a connection. This entry can be referenced as DIALSTRING in the Chat Script field.

Chat Script
The **Chat Script** allows you to enter a script, using standard `uucp` syntax, to control a connection. The DIALSTRING and PASSWORD keywords are special and are substituted during a connection attempt with the contents of the **Dialstring** and **Dest Password** fields.

Default Router
Used to specify a default router host name for your locality. This address is used to route accesses to unknown machines and networks. Specify a host name from those listed in `/etc/hosts` for this field.

Timezone
Used to select the correct timezone for your locality from a choice of options. The timezone you select sets the local time. When you change locations, this changes your computer's current timezone information.

Dialing Method
Used to choose either tone or pulse dialing. You will need to consult your local service provider for your location to check which you should use. The default is tone dialing.

Modem
Used to choose either the built-in modem or a PCMCIA

modem for communication over a telephone line. The built-in modem is approved for use in the United States of America and Canada, but you can use a PCMCIA modem in other countries.

Configure Servers

Accesses a window which, for each server in the server list (see "Server Panel" on page 2-37), you use to define the NCE actions that are performed when the server is contacted from this location.

Collect/Send Email

Causes any queued electronic mail to be sent and the remote system to be polled for new mail.

Note

The remote system must be configured as a Post Office Protocol (POP) server.

Mount File Systems

Used to enable the automounting of specified file systems when a connection is made. Care should be taken when using this option; for example, disconnecting the remote connection while you are actively using a remote file system can have unpredictable consequences. On a disconnect operation, file systems are automatically unmounted if it is possible.

Databases

When you operate your computer at a different location, you may have to change various system databases (such as the `/etc/hosts` file, or the `/etc/printcap` file). The **Databases** button gives access to the Preserved Database panel. This allows you to specify a list of database files to change for this location.

You can add, delete, or modify entries in the list by moving the cursor into the list area and pressing the **Menu** mouse button. Versions of the specified database files are applied when you click on **Set Current Location** in the Location panel. See "Editing database files" on page 3-9.

Server Panel

The Server panel enables you to define and configure the attributes of a server or remote system. The remote system could provide you with electronic mail (email) and file server facilities.

To display the Server panel, select the **Server** icon in the toolkit area.

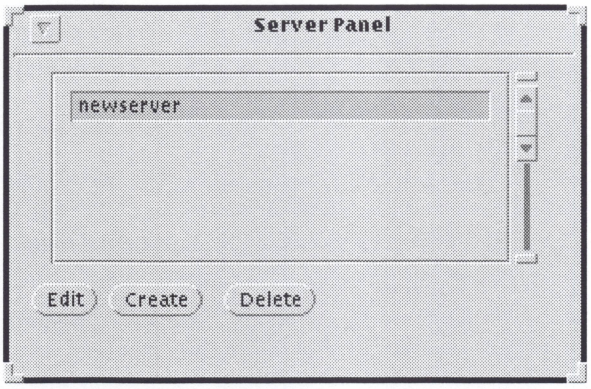


Figure 2-20 Server Panel

The Server panel contains the following facilities:

Create Creates a new server entry for editing.

Delete Deletes a server entry.

Edit Opens the Server Configuration window in which you can edit the attributes for a selected server.

Server configuration

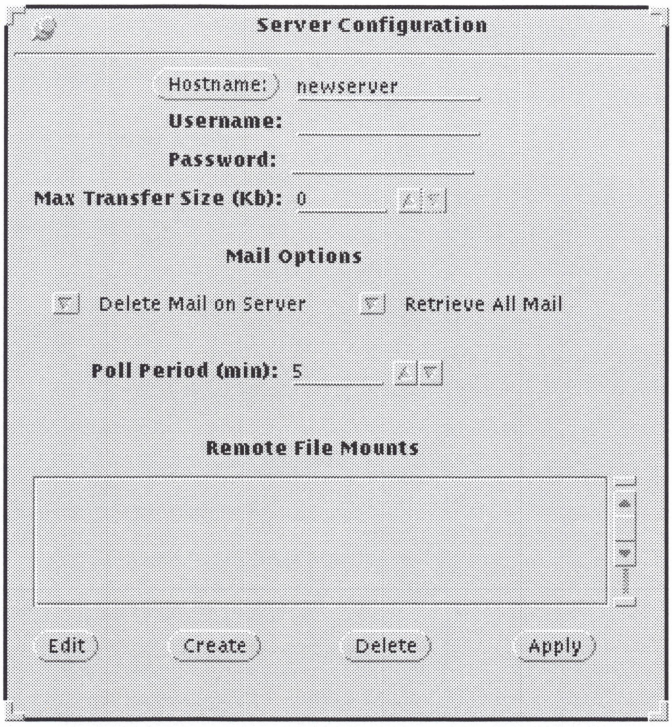


Figure 2-21 Server Configuration Window

Hostname

Specify the Internet host name of your server.

Username

Specify the user name for access to the server. For email, this is your email login account. For other facilities, this should be a login account configured for your use.

Password

Enter a password (which is not echoed or printed), which may be required to gain access to the user name account on the remote server.

Max Transfer Size

Set a maximum object size (in KB) to transfer. To save on bandwidth, files or messages that exceed this maximum transfer size are not transferred. You are informed if files are not transferred.

Note

A transfer size of zero means that there is no transfer limit.

Delete/Leave Mail on Server

Choose whether to delete email or leave it on the server after it has been retrieved. This can be used with a Post Office Protocol (POP) server.

Retrieve All/New Mail

Choose to transfer all mail, or only mail that has not already been read. Use the latter option if you have selected the **Leave Mail on Server** option to prevent all of your old mail being transferred on every operation.

Poll Period

Define the period in minutes between polls of the server.

Note

Polling only occurs if there is a valid connection established to the server machine.

Remote File Mounts

Provides access to a window in which you can specify file systems to mount automatically. The panel allows you to specify a name for the mount (for example, personal or project A), the server directory mount point, and the local directory mount point. Mounts can be read-write or read-only. Facilities are provided to add to, modify, or delete from the mount list.

3
Mobile Computing

This chapter describes how to use the NCE notebook computing tools for electronic mail and file synchronization. The steps required to use remote email and file synchronization are as follows:

- Defining a Server
- Defining a Location
- Defining File Synchronization Scheme (not required for email)
- Opening a Connection

Once you have completed these steps, as described in this chapter, you can collect electronic mail wherever you are using a network or modem.

Overview

Email

You can work on your email (including sending responses) while your SPARCbook 3 is disconnected from the network and your mail is queued on your SPARCbook 3. When you next connect to the network and contact the server, your SPARCbook 3 automatically dispatches outgoing mail and collects any mail sent to you while your SPARCbook 3 has been away from the network.

Note

In order to use remote email, you need network access and a user account on a server which is running a PostM Office Protocol daemon (POP-3). There are several versions of POP server software in the public domain for UNIX systems, and many installations have a POP server implemented.

If you do not already have access to a server running POP, consult your system administrator about setting a server up so that you can use the NCE remote email facilities. You may need to ask your system administrator to allocate you with a user name and password on the server.

You can use NCE to access the file `/var/spool/mail/user_name` (or similar) directly to transfer contents of a raw UNIX mail file from the server to your SPARCbook 3. You may then use any mail tool or application of your choice to read and deal with the electronic mail in the normal way.

File synchronization

File synchronization enables you to maintain similarity between files on your SPARCbook 3 and files on a remote server. When you connect to a remote server with file synchronization operational, selected files that have changed on your SPARCbook 3 while away from the network are updated on the server, while selected files changed on the server are updated on your SPARCbook 3.

Defining a Server

Use the Server panel to define and select a server definition. Once a definition for a server has been stored it can be selected from a list of predefined servers. You can store named definitions for many different servers. Typically, you only need one server worldwide to send to or collect email, but file system mounts could be carried out to several different servers.

Note

Before you can define a server and add it to the server list, a host entry for the server must exist in the `/etc/hosts` file on your SPARCbook 3.

To define a server proceed as follows:

1. Open the Server panel, select the **Create** button, and then select the **Edit** button. The Server Configuration window appears.

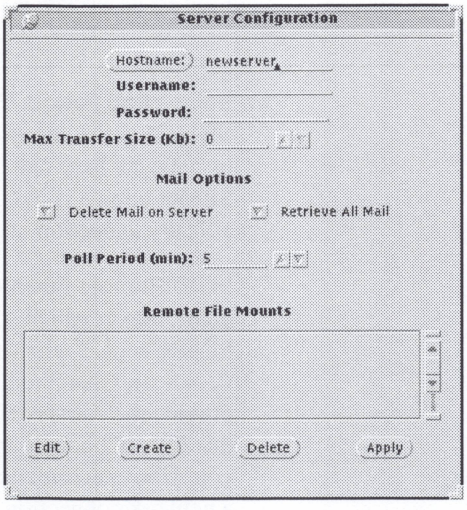


Figure 3-1 Server Configuration Window

2. Select the **Hostname** button and a menu appears (listing the hosts in the `/etc/hosts` file). Select the host name for the server you are going to use.

3. Enter the user name and password for your account on the server in the **Username** and **Password** fields respectively. You may need to ask the server's system administrator for a user name and password for the server.

4. Define the maximum transfer size per message (for email) or per file (for files) in the **Max Transfer Size** field. The default is 0 (zero) which corresponds to no maximum. You can leave this entry unchanged if you do not wish to set a maximum transfer size.

5. Under **Mail Options**, choose to leave a copy of collected mail on the server or to delete all collected mail on the server, and to retrieve all mail recieved or only the new mail received since your last connection.

Note

For the purpose of testing it is probably best to select "Leave Mail on Server" until you are happy with the email collection operation.

6. Enter a **Poll Period**. This field defines how often your SPARCbook 3 checks with (or polls) the server for any new email, or files that have changed. Polling only takes place while your SPARCbook 3 is in contact with the server (via the Ethernet or via a SLIP connection using the modem).

7. In the **Remote File Mounts** list, enter the name of the file system on the server which should be automatically mounted by your SPARCbook 3 when a connection is made. To do this select the **Create** and then the **Edit** buttons; in the Mount Editor window, provide the name of the mount, the mount points on the server and this SPARCbook 3, and access permission. Only use this facility if you wish to automatically mount a file system whenever you make a network connection to the server.

8. When the definition for a server is completed, select the **Apply** button in the Server Configuration window. The name of the server appears in the server panel.

Defining a Location

When you have defined a server (see "Defining a Server" on page 3-3), the next step is to define a location profile. A location, in this context, contains all the information required for your SPARCbook 3 to communicate with a server over the network while your SPARCbook 3 is at a particular geographical location. This is necessary in some circumstances because your network details and routing for your connection may depend on where you are. With the Location panel, you can change the necessary system parameters without to rebooting your SPARCbook 3.

The following information can be defined for a particular location:

- Hostname
- Network address
- Default router
- Timezone
- Whether to access server for mail or file mounts
- Whether to use the internal or PCMCIA modem
- Dialup information for making remote connection

Note

Before you can complete the definition for a location using the Location panel, the `/etc/hosts` file on your SPARCbook 3 will need to contain the internet address and host name for your SPARCbook 3 and for any router you wish to use. You may need to consult your system administrator for this information.

Example: creating three locations

For example, you could define three locations; an out-of-office location on the U.S. East coast, an out-of-office location on the West coast, and a location for a West coast office. It is assumed that each location provides a modem server which gives you dialup access to your mail server. The out-of office locations both require dialup access to your mail server, whereas the West coast office provides a direct Ethernet connection.

The following table shows example information used to define these three locations:

Parameter	East Coast	West Coast	West Coast Office
Location Name	Out East	Out West	In officeWest
Local Hostname	socrates	plato	plato
Internet Address	100.10.20.30	150.40.50.60	150.40.50.60
Dest Hostname	modemserve-east	modemserve-west	-
Dest Password	*******	*******	******
Dialstring	9,18001234567	8765432	-
Chat Script	in: socrates rd: PASSWORD	in: plato rd: PASSWORD	in: plato rd: PASSWORD

Table 3-1 Example Parameters for Three Locations

Note

The parameters used in Table 3-1, including the Internet addresses, are examples only. Yours will be different.

To define a location proceed as follows:

1. Open the Location panel. Select the **Create** button and then the **Edit** button. The Location Editor window is displayed, as illustrated in Figure 3-2.

2. Type in the name for this location in the **Location Name** field.

3. Select the *local hostname* for your machine. Select the **Local Hostname** button to display a list from the `/etc/hosts` database. It may be possible for you to use the same hostname for more than one location but you will need to consult the system administrator at each location about this.

4. The *Internet Address* is automatically inserted from the `/etc/hosts` database.

5. Select **Dest Hostname** to display a list of modem servers (default SLIP servers) which provide you with dialup access to the network. This example indicates the use of different servers for each of the out-of-office locations, although in practice you could communicate with the same server from both locations. The server names and addresses must exist in the `/etc/hosts` file on your

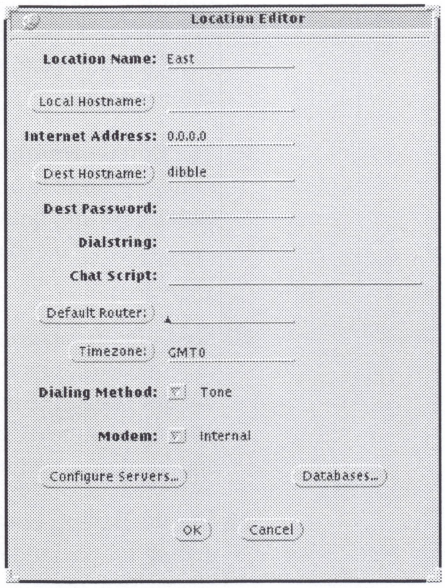


Figure 3-2 Location Editor Window

SPARCbook 3. To enter a server, select the **Dest Hostname** button and choose from the displayed list of hosts.

6. Enter a password into **Dest Password** fields. The characters typed into this field are not visible. This allows you to enter a secure dialup password for the remote system.

7. Define the default dialing sequence needed access the remote server in the **Dialstring** field. Standard `uucp` syntax is used, which means that a comma (,) specifies a 2 second pause. In this example, the system named East Coast (in Table 3-1) has a 1800 number, and a 9 is to required to access an outside line. The dial sequence can be modified at the time of dialing if required.

Note

You can supply complex dialstrings to use credit card facilities. For example, between dialing and receiving the AT&T "bong", 6 seconds (or 3 commas) is sufficient. You can then add a credit card number at the end of the dial sequence.

8. Use the **Chat Script** field to provide connection information (if required). In this example, the remote server requires the hostname in response to the `login:` prompt, followed by the Password (which is automatically read from the password information entered above) response to the `Password:` prompt.

9. The **Default Router** field is optional but is required if you use a router machine to access other networks and services. Select the **Default Router** button and a list of hosts defined in the `/etc/hosts` database is displayed. Select the required router from this list.

10. Select the **Timezone** field to display a list of timezones. Select the required timezone for your location from this list. You can then use the **Set Timezone** button at the top of the main NCE window to set your home time (if you are traveling) so that you can see both home and local time on the main NCE or Status Windows.

11. Use the **Dialing Method** popup to choose between tone or pulse dialing for the modem.

12. Use the **Modem** popup to choose between the internal modem or PCMCIA modem for the physical connection to the telephone network.

13. If you wish to use the email facilities or remote file mount facilities, select the **Configure Servers** button. This displays a window which contains the names of servers that you have previously defined with the Server panel. Choose the required server and enable **Collect/Send Email** or **Mount File Systems** as required.

14. Select **Databases...** to select modified database files for this location (see "Editing database files" on page 3-9). For example, you could add the `/etc/hosts`, `/etc/printcap` and `/etc/filesystems` files. When you are satisfied with the list, select **Apply**.

15. When all fields in the Location Editor are complete, select the **OK** button at the bottom. The new location appears in the Location panel.

To activate a location, choose it from the list in the Location panel and then select the **Set Current Location** button. Once the Location Changed message appears in the NCE main panel message area the

system configuration is set to your new location and you are ready to use the new system configuration. Because this stops and restarts all the network daemons, this takes a few seconds.

You can change locations at any time. To do this select an existing defined location from the Location panel and edit it or create a new one.

Editing database files

To add a file to the list or to change a file in the list, move the cursor into the list area, press the **Menu** mouse button and choose **Edit List**. With the cursor still in the list area, press the **Menu** mouse button again and choose **Insert**.99 Make the required addition to the list and then choose **End Editing** from the Scrolling List menu.

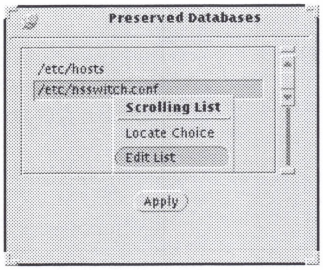


Figure 3-3 Editing the Preserve Databases List

To change or delete an entry already in the list, select it before choosing from the edit menu a second time.

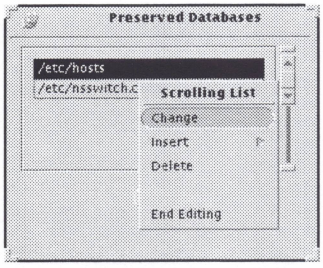


Figure 3-4 Changing or Deleting a Preserve Databases List Entry

Opening a Connection

When you have set up your SPARCbook 3 to work with a server (see "Defining a Server" on page 3-3) and defined your location information (see "Defining a Location" on page 3-5), your SPARCbook 3 is ready to communicate over the network or over a telephone line.

It is useful at this point to perform a simple check to test the communications link between your SPARCbook 3 and server. If you can communicate, then the NCE tools should operate.

Your SPARCbook 3 should collect email automatically from the mail server and, if you have configured your SPARCbook 3 to use NFS, should perform any remote file system mounts you have specified.

Communications check

As an initial check of the configuration you have set up, first check the POP mail facilities and the remote file facilities using a network based connection (rather than the modem dialup).

To check network communications:

1. Connect your SPARCbook 3 to the network.
2. Check that you can access the server by using `ping`. For example at the command prompt type:

   `/usr/sbin/ping` ***`servername`*** Solaris 2

   or

   `ping` ***`servername`*** Solaris 1

Where `servername` is the name of the server you wish to communicate with.

If the connection is functioning, your should receive the response:

```
servername is alive
```

If you have problems at this stage, check the network configuration of your SPARCbook 3 and check the host names and Internet addresses that you have used in the Server and Location panels.

Network Communications

To use networking over the Ethernet or modem connection you should initially configure your SPARCbook 3 as a networked system using the `/etc/hosts` file. To use a facility that requires a remote name server (for example the Mosaic software to access the World Wide Web) you should modify your `nsswitch.conf` file to read the following on the hosts line:

```
hosts: files dns
```

This sets up your system so that it first looks at the local hosts file, and if a name cannot be resolved, resolve it using the `dns` facility to look up the `/etc/hosts` file on a remote server. You should not attempt to access remote hosts unless you are on the network and have access to the configured name server.

Modem Communications

To dial the default number (which was set up when you configured the Location panel, see "Location Panel" on page 2-33) all you need to do is connect your SPARCbook 3 to the phone jack and select the **Connect** button at the top left of the main NCE window.

If the **Audio Output** option in the Modem panel is enabled , the modem can be heard dialing out to establish the connection. After the connection has been successfully established, the sound stops. The NCE message panel confirms when a connection has been established.

When you are finished you can manually disconnect the line using the **Disconnect** button at the top of the NCE main window (see "NCE Buttons" on page 1-8). If you wish to poll for email more frequently than the intervals set up in the Server panel you can use the **Poll** button at the top of the NCE main window.

The internal modem (or PCMCIA modem) can be used by the NCE communications software, by faxtool, and from a shell window (using `tip modem` for example, which provides direct access to the modem interface). If you are using the modem with one tool, faxtool for example, other tools cannot use it.

For example, to use faxtool you need to switch the fax server to active in the faxtool Configuration window. While the fax server is active, you cannot use the modem for other operations. You should, therefore, shutdown the fax server when you are not using faxtool.

For more information about using faxtool, refer to SunSoft's documentation set (see "Related Publications" on page viii).

Custom Connection

To dial a number other than the default number, start the Connect panel from the NCE tools and choose the **Custom Connection** option from the **Connect** menu. This displays the Custom Connection Editor.

The Custom Connection Editor window contains the information from the location profile currently selected in the Location panel (see "Location Panel" on page 2-33). You can modify the information for this attempt; to add an exchange access digit to the dialstring, for example. This facility also allows you to use a dataport style modem where you dial the number by hand.

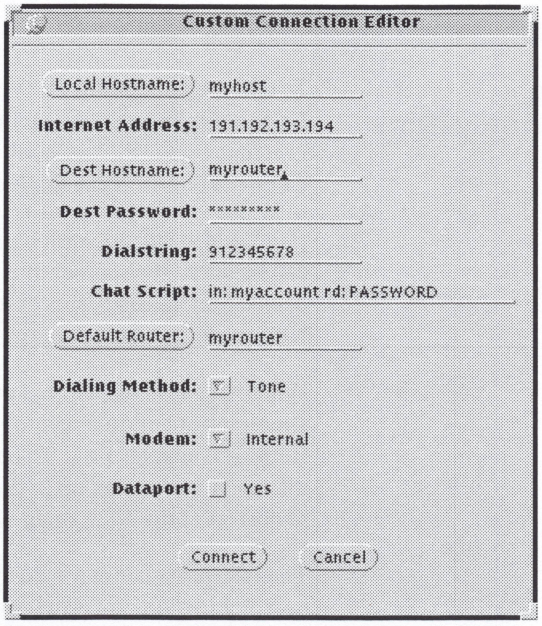


Figure 3-5 Custom Connect Editor

The custom connection information is retained until the Connect panel is closed.

File Synchronization

When you have defined a server with the Server panel (see "Defining a Server" on page 3-3) and a location with the Location panel (see "Defining a Location" on page 3-5), you are ready to define a synchronization scheme with the Files panel.

File synchronization provides you with a powerful way to update files on one computer with changes made on another. For example, you may frequently use a desktop workstation in an office and use your SPARCbook 3 at home or in the field to work with the same data. Before leaving your office, you could connect your SPARCbook 3 and workstation together via Ethernet and use the Files panel to update files on your SPARCbook 3. You could work on those files on your SPARCbook 3 and then on your return to the office, use the Files panel again to update your workstation with changes made to files on your SPARCbook 3.

The Files panel lets you create many synchronization schemes to cater for a range of requirements. For example, you could configure one scheme for a desktop workstation, as described above, and configure another scheme to work with a remote server to synchronize the files in a shared database.

The following information can be defined for a particular file synchronization scheme:

- Pathname of the filetree's mount point on the SPARCbook 3
- Pathname of the filetree that you want synchronized with the server
- Backup policies
- File synchronization policies

Creating a file synchronization scheme

To create a synchronization scheme choose **Create** from the **Edit** menu in the Files panel. The Files Control Area (FCA) is displayed. The default name displayed in the FCA is *Blank Scheme*.

Consider the example illustrated in Figure 3-6.

Server filetree

In the **Server Filetree** field you specify the full pathname of the mounted server directory on your SPARCbook 3.

For example, to specify a server directory called `/work/sync` which is mounted on your SPARCbook 3 at `/mnt`, you would enter `/mnt/work/sync` in this field.

Local filetree

In the **Local Filetree** field, you specify the full pathname of the directory on your SPARCbook 3 that you want to synchronize with the directory identified in the **Server Filetree** field.

For example, to synchronize files and directories below `/mnt/work/sync` on the server with those below `/opt/work/sync` on your SPARCbook 3, you would set **Local Filetree** to `/opt/work/sync`.

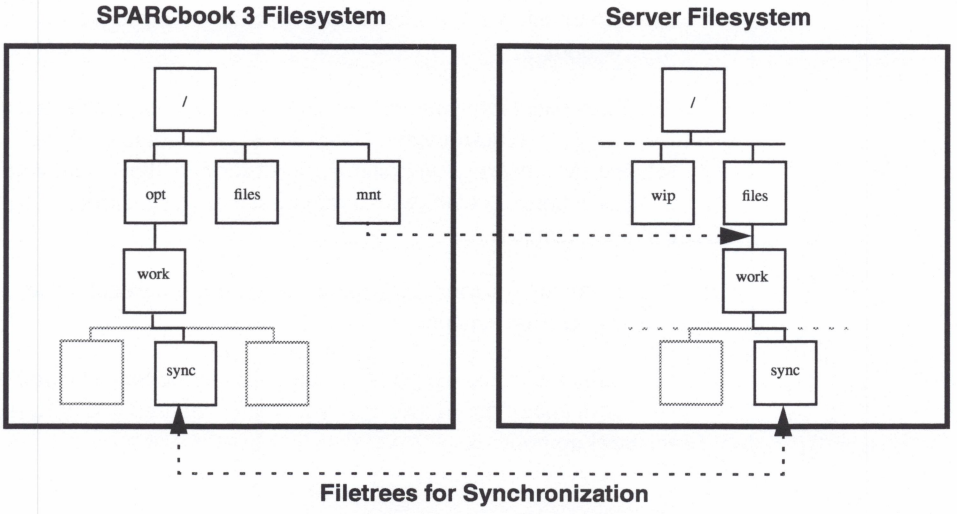


Figure 3-6 Example Filetree Mount Point

Next, you use the **Options** area to define your backup and synchronization policies.

Options

The **Options** area and the four pull down menus at the bottom of the **File Controls** area control the way synchronization and backups are performed. If you select **Make Backups**, copies are made of files before they are transferred for synchronization. This ensures that you can recover from any file corruption caused, for example, by

communication failures between the two computers during the synchronization process. Backup names are appended with the entry specified in the **Backup Suffix** field. This prevents backup files themselves being synchronized.

You can use regular expressions to either include or exclude files from the synchronization. If you select **Use Include R.E's**, then only the files that match the specification are synchronized. Conversely, if you select **Use Exclude R.E's**, then any files that match the specification are not synchronized.

By selecting **Use Include List**, you can identify specific files for synchronization. By selecting **Use Exclude List**, you can identify specific files for exclusion from synchronization.

With the **Synchronize** options, you can choose whether to update files only on the server with changes made on your SPARCbook 3, update files only on your SPARCbook 3 with changes made on the server, or to update files on both the server and your SPARCbook 3.

Create the required include and exclude lists, and specify the required include and exclude regular expressions. See "Files Panel" on page 2-11.

When you have completed the definition for this synchronization scheme, select **Apply**. The new scheme appears in the **File sync schemes** list in the Files panel.

Using Include and Exclude Options

The operation of the **Use Include R.E.s**, **Use Exclude R.E.s**, **Use Include List** and **Use Exclude List** options follow these rules (using the filetrees from the example on page 4-27):

1. If no include or exclude options are selected, then all files below `/mnt/work/sync` on the server are synchronized with all files below `/opt/work/sync` on your SPARCbook 3. This is the default.

2. If no include options are selected but either or both of the exclude options are selected, then all files below `/mnt/work/sync` are synchronized with `/opt/work/sync` except for any excluded files or any files below excluded directories.

3. If you select either or both include options, and neither exclude option, then all included files below `/mnt/work/sync` are synchronized with `/opt/work/sync`.

4. If you select either or both include options, and either or both exclude options, then all included files which are not also excluded are synchronized.

For example, consider the set of files and include and exclude options shown in Figure 3-7.

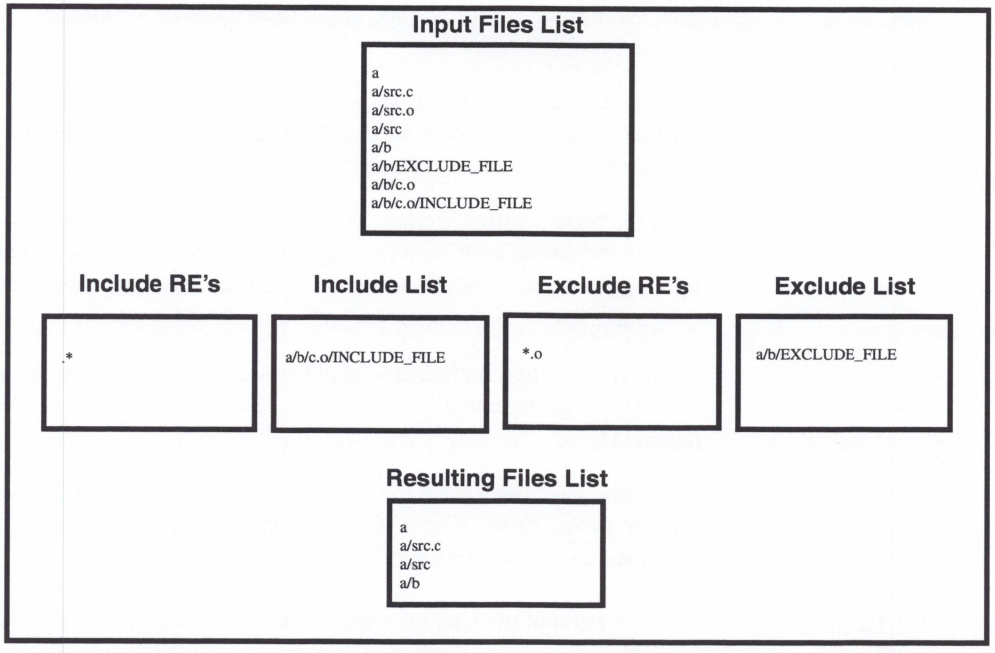


Figure 3-7 Using Include and Exclude Options

In this example:

- The **Include RE's** entry allows all of the input files to be included.
- The **Include List** entry specifically includes `a/b/c.o/INCLUDE_FILE`.
- The **Exclude R.E's** entry excludes all files containing `.o`; this excludes `a/b/c.o/INCLUDE_FILE`, even though it is specified in the **Include List**.
- The **Exclude List** entry specifically excludes `a/b/EXCLUDE_FILE`.

4

PCMCIA Device Configuration

This chapter describes how to configure PCMCIA cards for use with your SPARCbook 3.

Introduction

With the PCMCIA panel you can configure a PCMCIA card to operate with your SPARCbook 3.

Note

If you experience difficulties using a particular PCMCIA card please contact your SPARCbook supplier.

The operation of the PCMCIA panel differs under Solaris 1 and Solaris 2. The Solaris 1 kernel and NCE software supplied with your SPARCbook 3 includes card services and device drivers for the card types listed on this page. In Solaris 2 the devices are dynamically allocated. When you insert a card, the appropriate device needs to be configured. You can configure a device from the Solaris command prompt or with automatic NCE configuration scripts facility. NCE contains example scripts that are executed when a PCMCIA card is installed or ejected. You can modify these scripts if required.

Card Insertion

When you insert a PCMCIA card, the PCMCIA panel shows its Card Information Structure (CIS) card name in the **Cards Available** list, and shows the slot in which it has been fitted (0 for the lower slot and 1 for the upper slot). For example, Figure 4-1 shows that an IBM 2MB SRAM card is installed in slot 1. Card insertion and ejection is automatically detected by NCE.

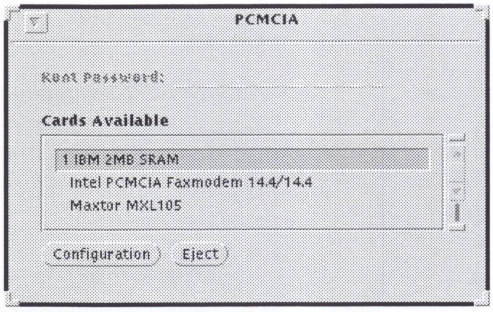


Figure 4-1 PCMCIA Panel

When you select the **Configuration** button, the PCMCIA Configure window is displayed. This provides an area in which the Insertion or Ejection scripts are displayed and can be edited.

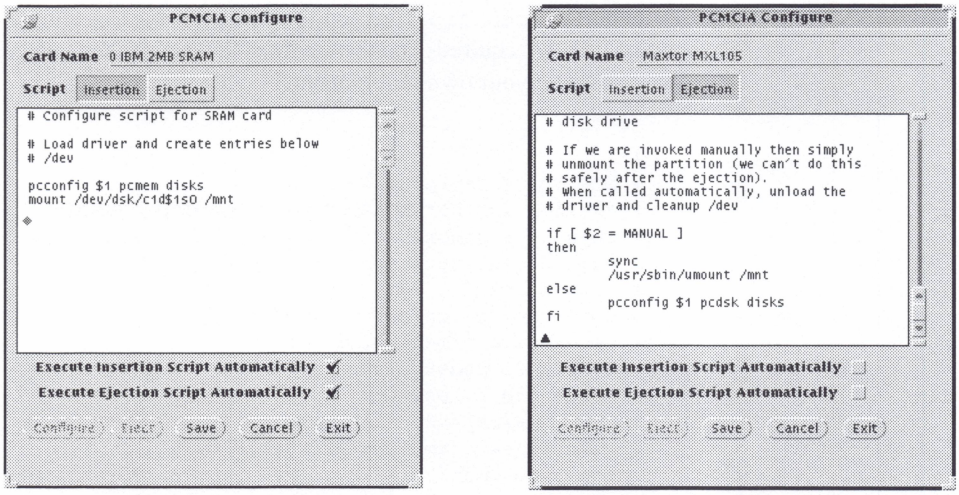


Figure 4-2 Insertion and Ejection Scripts

Using PCMCIA Cards with Solaris 2

Configuration

The `pcconfig` command is used on insertion, on configuring the system for PCMCIA card operation, and on ejection after PCMCIA card removal. The following forms of the command are valid:

`pcconfig n pcdsk disks`	for hard disks and Solid State Files
`pcconfig n pcmem disks`	for SRAM cards
`pcconfig n pcmodem ports`	for modems

This command must be run as root and `n` is 0 or 1 depending on the card slot.

Using NCE, these configuration commands can be automated. For example, when you insert a Maxtor hard disk, the PCMCIA panel displays the following line in the **Cards Available** list, if you are logged in as root or have entered the root password in the PCMCIA panel:

```
0 Maxtor MXL105
```

If you select this line and then the **Configuration** button, the Configure window is displayed.

Editing scripts

Using the scripts facility in NCE you can configure the system to automatically configure and initialize PCMCIA cards on insertion, on a card by card basis.

For example, the insertion script for the Maxtor drive, shown below, executes the `pcconfig` command (where `$1` is the slot number and is automatically acquired) and then mounts the device. You can edit the script to meet your own requirements.

```
#! /bin/sh
#
# NCE_IDENT Script003
# "Maxtor MXL105" NOAUTOCONFIG NOAUTOUNCONFIG
# This is a generated file. Only edit BELOW this line
# Sample configuration for PCMCIA
# disk drive
# Load the device driver and generate any
# required entries below /dev
pcconfig $1 pcdsk disks
# Mount the filesystem
mount /dev/dsk/c2d0$1s0 /mnt
# Make filesystem read writeable by all
chmod a+rw /mnt
```

If you select the **Execute Automatically** button, the script is executed each time you insert the card.

The ejection script, shown below, is similar but contains two parts.

```
#! /bin/sh
#
# NCE_IDENT Script003 "Maxtor MXL105 " NOAUTOCONFIG
NOAUTOUNCONFIG
# This is a generated file. Only edit BELOW this line
# Sample unconfiguration for PCMCIA
# disk drive
# If we are invoked manually then simply
# unmount the partition (we can't do this
# safely after the ejection).
# When called automatically, unload the
# driver and cleanup /dev
if [ $2 = MANUAL ]
then

            sync
            umount /mnt
else
            pcconfig $1 pcdsk disks

fi
```

The first is defined as: `if [$2 = MANUAL]`, which refers to the selecting of the **Eject** button on the PCMCIA panel; normally this script is used to unmount a mounted file system. The second part of the script is automatically run when you remove the card. This is normally the `pcconfig` command again.

Device points are dynamically allocated and removed. The following devices are created when PCMCIA cards are installed:

```
Hard Disk/SSF   /dev/dsk/cMdns[0-7]
SRAM            /dev/dsk/cMdns0
Modem           /dev/term/d         for Slot 0
                /dev/term/e         for Slot 1
```

Where `M` is 1 for the first inserted disk type after a reboot (as opposed to a Save and Resume), or 2 for the second inserted disk type after a reboot.

Using PCMCIA Cards with Solaris 1

Hard Disks and Solid State Files

These appear as normal disk devices. You can use the `format` program to format the drives, and you can mount them as normal disk drives. The following device names are used:

`/dev/pcdisk0`	for a drive in slot 0
`/dev/pcdisk1`	for a drive in slot 1

The raw device entry points `/dev/rpcdisk0` and `/dev/rpcdisk1` are also available.

SRAM Cards

An SRAM card appears as a floppy disk device. You can use the `fdformat` command by specifying:

`fdformat /dev/rpcmem0`	for slot 0
`fdformat /dev/rpcmem1`	for slot 1

Note

Only a single minor device is available for SRAM pseudo-floppy devices

Modem

A PCMCIA modem can be used with the NCE Connect panel and Modem panel, or from `faxtool` by selecting an external modem in the relevant configuration windows. The modem device is:

`/dev/pcmodem0`	for a modem in slot 0
`/dev/pcmodem1`	for a modem in slot 1

Flash Card

Flash cards are mounted on the file system, written once and then used as a read only device. Because of the way in which it is necessary to program PCMCIA flash cards, you create a disk partition on your hard disk that is at least the size of the largest flash card that you wish to use.

For example, to create a file system on this disk partition and then copy it to the flash card using the raw disk device you could use the following:

```
# mkfile 8m /dev/rsd1g
# newfs /dev/rsd1g
# mount /dev/sd1g /mnt
```

Next you copy any files that you wish to write onto the flash card to `/mnt`. Once you have written the required files into `/mnt`, you `umount` the file system and copy its contents to the flash card as follows:

```
# umount /mnt
# dd if=/dev/rsd1g of=/dev/rpcflash0
```
(or **rpcflash1** if your flash card is in slot 1)

Once the card has been written you can mount it and used it as a read-only device as follows:

```
mount -r /dev/pcflash0 /mnt
```
(or **pcflash1** if your flash card is in slot 1)

You can use the NCE PCMCIA scripts facility to automate this operation. For example, you could use the following script to automatically `mount` the file system on insertion, and to `umount` it when the PCMCIA panel **Eject** button is selected:

```
mount -r /dev/pcflash$1 /mnt      (for insertion)
echo PCMCIA flash card inserted slot $1

if [ $2 = MANUAL ]

then
sync
umount /mnt                       (for removal)
echo PCMCIA flash card unmounted slot $1

else
echo PCMCIA flash card removed slot $1

fi
```

The `$1` is automatically replaced with the PCMCIA slot number. The `MANUAL` line specifies that these commands are executed when the **Eject** button is selected. Non-MANUAL operation specifies that automatic commands are executed after the card has been removed.

Appendix A

Regular Expressions

This appendix provides details of how the regular expressions in the Files panel work (see "Files Panel" on page 2-11).

The regular expressions available for use with the `regexp` functions are constructed as follows:

Expression	Meaning
`c`	the character `c` where `c` is not a special character.
`\c`	the character `c` where `c` is any character, except a digit in the range 1-9.
`^`	the beginning of the line being compared.
`$`	the end of the line being compared.
`.`	any character in the input.
`[s]`	any character in the set `s`, where `s` is a sequence of characters and/or a range of characters; for example, `[c-c]`.
`[^s]`	any character not in the set `s`, where `s` is defined as above.
`r*`	zero or more successive occurrences of the regular expression `r`. The longest leftmost match is chosen.
`rx`	the occurrence of regular expression `r` followed by the occurrence of regular expression `x`. (Concatenation)
`r\{m,n\}`	any number of `m` through `n` successive occurrences of the regular expression `r`. The regular expression `r\{m\}` matches exactly `m` occurrences; `r\{m,\}` matches at least `m` occurrences.
`\(r\)`	the regular expression `r`. When `\n` (where `n` is a number greater than zero) appears in a constructed regular expression, it stands for the regular expression `x` where `x` is the nth regular expression enclosed in `\(` and `\)` that appeared earlier in the constructed regular expression. For example, `\(r\)x\(y\)z\y` is the concatenation of regular expressions `rxyzy`.

- Characters that have special meaning except when they appear within square brackets (`[]`) or are preceded by `\` are:

  `., *, [, \`

- The character `^` at the beginning of an expression permits a successful match only immediately after a new line.

- The character `$` at the end of an expression requires a trailing new line.

- The character -, when used within square brackets, denotes a range, `[c-c]`, unless it is just after the open bracket or before the closing bracket, `[-c]` or `[c-]` in which case it has no special meaning.

- When used within square brackets, the character `^` has the meaning complement of if it immediately follows the open bracket (example: `[^c]`); elsewhere between brackets (example: `[c^]`) it stands for the ordinary character `^`.

- The special meaning of the `\` operator can be escaped only by preceding it with another `\`, for example `\\`.

For more information on regular expressions, refer to the UNIX manual page on `grep` (Section IV).

Appendix B

External Display Configuration

With the Display panel you can configure the display interface for a wide range of display monitors. This appendix explains how to use the Display Editor to create a new display type entry in the Display Typesd list.

Adding to the Display Types List

You can add to the Display Types list by using the Display Editor. The Display Editor appears when you select **Edit** or **Create** from the Display panel. Table B-1 shows an example set of video timing parameters as presented in a manufacturer's specification for an actual monitor.

Display Manufacturer's		SPARCbook Equivalent	Unit
Parameter	**Specification**		
Pixel Rate	100000	Pixel Clock Frequency	KHz
Horizontal frequency	68.68	-	KHz
Vertical frequency	75	-	Hz
Horizontal resolution	1152	Horizontal Resolution	Pixels
Vertical resolution	900	Vertical Resolution	Lines
HPeriod	1456	-	Pixels
HBlanking	304	See note below	Pixels
HSync delay	32	Horizontal Front Porch	Pixels
HSync width	128	Horizontal Sync Width	Pixels
VPeriod	915	-	Lines
VBlanking	45	See below	Lines
VSync delay	3	Vertical Front Porch	Lines
VSync width	3	Vertical Sync Width	Lines

Table B-1 Example Display Parameters

Note

Using the manufacturer's parameters, the horizontal and vertical back porches can be calculated in the following way:

Horizontal Back Porch = HBlanking – HSync delay – HSync width= 144 pixels

Vertical Back Porch= VBlanking – VSync delay – VSync width = 39 lines

Normally, the most convenient way to create a new display definition is to edit an existing one, by changing the name and modifing any of the characteristics as necessary. For example, you may need only to change the sync signals from being separate horizontal and vertical signals to being combined onto the green video channel.

Display Parameters

The video timing parameters for a display are derived from the time taken to output one pixel, from the time it takes the electron beam to scan one line, and from the time it takes the electron beam to scan the whole display. Typical characteristics for horizontal and vertical synchronization and blanking signals are shown in Figure B-1.

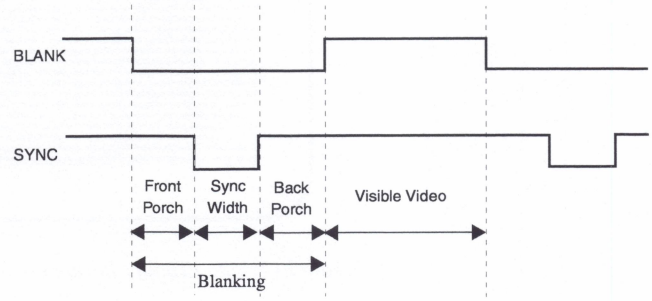


Figure B-1 Video Timing Signals

The waveforms for the horizontal and vertical sync signals are similar in shape but differ in that the horizontal parameters are measured in pixels and the vertical parameters are measured in lines. Also, there are periods when the electron beam is switched off (called blanking periods). The blanking periods include the time taken by the synchronization pulses and by front and back porches.

The way that the timing signals affect the image on the display is shown in Figure B-2.

The horizontal and vertical sync signals can be supplied to a display on separate wires, can be combined together to form a composite signal, or can be mixed onto the green video channel (by enabling the **Sync on Green** in the Display editor).

The blanking pedestals refer to signal shaping used by some displays to enhance the color black on the display.

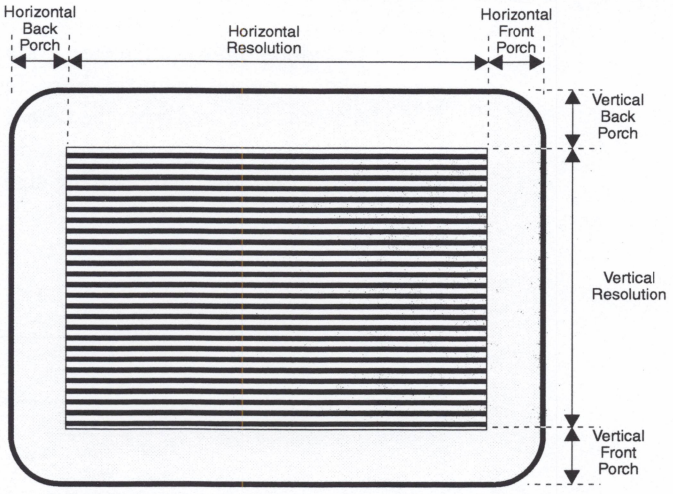


Figure B-2 Video Timing Paramters on the Displayed Image

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Printed in UK
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